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Enhancing the Engagement of Higher Education Academics in Knowledge Transfer through a Rewards and Incentives Scheme Using an Action Research Approach

Volume 1

Richard Alun Beaumont

Student number: M00342513

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Middlesex University, London, UK

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Contents

Contents	i
List of figures.....	v
List of photographs	vi
Abbreviations.....	vii
Acknowledgements.....	viii
Dedication	ix
Abstract	x
1.0 Introduction	1
1.1.The nature and relevance of KT to Higher Education.....	1
1.2.Relevance of KT within Middlesex University (MU).....	4
1.3.The use of an Action Research Framework	5
2.0 Cycle 1: Establishing the Impediments to H&E Academics' Engagement in KT	11
2.1 Constructing.....	11
2.1.1 Introduction.....	12
2.1.2 Antecedents of external engagement – individual characteristics, organisational context, institutional context	13
2.1.3 Challenges/Barriers to engaging academics in KT	15
2.1.4 Cycle 1 research aims	18
2.2 Planning.....	20
2.3 Taking action	23
2.4 Evaluation	26
2.4.1 Current academic roles	26
2.4.2 Length of academic employment.....	27
2.4.3 Relevance of KT to personal ideals, the organisation and the participant's own work (Q4, 5 and 6).....	28
2.4.4 Nature of KT activity undertaken in 2011/12	30
2.4.5 Motives for being involved in KT in 2011/12 (Q8).....	31
2.4.6 Research/KT Work Programme allowances (2011/12)	32
2.4.7 Experiences of working with MU's Research and KT office (RKTO) (Q11, 12 and 13).....	33
2.4.8 Impact of KT on enhancing research or teaching/learning	34
2.4.9 Institutional and individual barriers impeding engagement with KT	35
2.4.10 Interventions to enhance academic engagement in KT	38
2.4.11 Representativeness of Cycle 1 Survey compared with School in terms of staff descriptors.....	40
3.0 Cycle 2: Introduction of a Rewards and Incentives Scheme	45
3.1 Constructing.....	45
3.1.1 Context of rewards/incentives and theoretical conceptions	46
3.1.2 Rewards and incentives within the HE sector for KT.....	46
3.1.3 Rewards and Incentives at MU.....	47
3.1.4 Rewards as a result of IP exploitation	48
3.1.5 Cycle 2 research aims	49
3.2 Planning.....	51
3.3 Taking action	57
3.4 Evaluation	60
3.4.1 Themes emerging from the NVivo analysis.....	60
3.4.2 Further NVivo analysis and the use of memos for theme identification.....	61
3.4.3 Summary of the key aspects to reflect within the School's R&IS	62
3.4.4 Implementation of the R&IS.....	69
T.3.1 Procedure for introducing the R&IS.....	72
T.3.2 Introduction of the R&IS as an example of change management	73
T.3.3 Need for flexibility during the introductory phase	76

T.3.4 Additional competitive inter-departmental allowance	77
T.3.5 Context and nature of the R&IS	78
T.3.6 Reflections on the role of financial payments as motivators as part of the R&IS	79
T.3.7 Reflection on intrinsic and extrinsic motivating factors	82
T.3.8 Context of the R&IS for developing KT in H&E in terms of the wider university	82
T.3.9 Embedding the R&IS and related issues of motivation to engage with it	83
4.0 Cycle 3: The Role of Motivation and Embedding the R&IS within H&E	84
4.1 Constructing	85
4.1.1 Motivation of employees for consideration in an academic setting	85
4.1.2 Motivating individual academics to be engaged in KT	86
4.1.3 Leadership and implementation	90
4.1.4 Engaging and embedding the R&IS	91
4.1.5 Research aims for Cycle 3	92
4.2 Planning	94
4.2.1 Understanding individual motivation to engage with the R&IS	94
4.2.2 Embedding the R&IS effectively and group motivation to be engaged – use of an ARG Group (ARG)	96
4.3 Taking action	101
4.3.1 Interviews in method and practice	101
4.3.2 ARG in method and practice	102
4.4 Evaluation I: Interviews	111
4.4.1 Themes emerging from the NVivo analysis	111
4.4.2 Further detailed analysis by NVivo	112
4.4.3 Using memos to identify threads and themes	113
4.4.4 Summary of key actions that arose from the interviews	119
4.5 Evaluation II: ARG	121
4.5.1 First posed question – the R&IS as a motivator to engage in KT – categories and voting	121
4.5.2 Second posed question – embedding the R&IS	125
4.5.3 Evaluating the ARG actions – the role of the R&IS in motivating academics in KT	127
4.5.4 Evaluating the ARG action points – the embedding of the R&IS	129
4.6 Summary of evaluation and comparison of action areas raised in ARG and Interviews	134
5.0 Mini-Cycle – Using the ARG to Embed the R&IS More Effectively	137
5.1 Taking action – ARG2 in method and process	137
5.2 Evaluation	141
5.2.1 ARG2 action planning results	141
5.2.2 Actions arising from the ARG2	145
6.0 Meta-reflection Utilising Mezirow's Model	148
6.1 Content	151
6.1.1 Iterative process in determining AR Cycles	151
6.1.2 Impacts of the research itself on KT integrity	154
6.1.3 Considerations on methods of the research	155
6.1.4 Ethical and power considerations	156
6.1.5 Demonstrating quality and rigour of the AR research	163
6.2 Process	167
6.2.1 Aspects relating to the process of the research	167
<i>Cycle 3 – Sampling for ARG and Interviews</i>	170
6.2.2 Approaches to analysis	173
6.2.3 Emerging R&IS	175
6.3 Premise	178
6.3.1 Changing culture of MU and resulting restructures	179
6.3.3 Methodological reflections	186
6.3.4 Reflections on the Doctorate nature of the research	188

6.3.5 Evaluation of impact within an AR project	191
7.0 Assessing the Impact of the Research Project	193
7.1 Evaluating impact through financial data	193
7.2 Evaluating impact through the R&IS bidding process.....	195
7.3 Evaluating impact through a further online survey	196
7.3.1 Comparison of sample characteristics of the online 'impact' 2014 survey compared with the Cycle 1 Survey of 2013	197
7.3.2 Findings of the 2014 impact survey.....	198
7.4 Concluding reflections on impact evaluation	201
8.0 Outcomes, Limitations and Further Research.....	203
8.1 Outcomes.....	203
8.1.1 First person learning and practice: The individual	203
8.1.2 Second-level learning and practice: The organisation and participants	203
8.1.3 Third-level learning and practice: The wider AR and KT community	205
8.1.4 Summary of key lessons emerging from the research for KT practitioners and policy makers ...	208
8.2 Limitations.....	210
8.3 Further research	211
Bibliography	213

List of tables

Table 1 Comparison of Work Programme Allowances for Research and KT at School, from 2010/11 & Cycle 1 Survey	33
Table 2 Summary of categories and codings in what ways will the R&IS be a motivator to engage in KT	122
Table 3 Summary of categories and codings where R&IS was not a motivator	124
Table 4 Voting results for 1st posed question – where the R&IS will be a motivator to engage in KT (note adjustment for error (in brackets) making no material difference to rankings)	125
Table 5 Summary of categories and codings – Embedding the R&IS	125
Table 6 Voting results for 2nd posed question	126
Table 7 Comparison of ARG categories and some common key areas with individual interviews – Motivation of the R&IS	134
Table 8 Comparison of ARG categories and personal Interview– Embedding the R&IS	135
Table 9 A Learning in Action process for the meta-level interpretation of the project	148
Table 10 Bids made for R&IS allocations 2012-2014	196
Table 11 Comparison of academic roles Cycle 1 and impact surveys	197
Table 12 Comparison of length of employment Cycle 1 and impact surveys.....	197
Table 13 Comparison of age group between the Cycle 1 and impact surveys.....	197
Table 14 Summary of key lessons emerging from the research for KT practitioners and policy makers.....	209

List of figures

Figure 1 AR 'Cycle' – based on Coghlan and Brannick (2010).....	6
Figure 2 Connection between the AR Cycles (Coghlan and Brannick, 2010, p.10.....	7
Figure 3 Thesis Action Research Cycle (Zuber-Skerritt and Perry, 2002, p.177).....	9
Figure 4 Timeframe and stages for Cycle 1.....	11
Figure 5 Analytical framework of external engagement by academic researchers identifying the relevant dimensions (Perkmann et al., 2013, p.430).....	14
Figure 6 Q2 Role description of participants	27
Figure 7 Q3 Length of academic employment.....	28
Figure 8 Q5 Relevancy of KT to Middlesex University	29
Figure 9 Relevance of KT to the individual academic	29
Figure 10 Q7 showing the nature of participant's KT activities.....	30
Figure 11 Q8 Motivation for participation with external organisations.....	31
Figure 12 Q14 Impact of KT on research outcomes.....	34
Figure 13 Q15 Impact of KT on Teaching/Learning outcomes.....	35
Figure 14 Q16 Institutional barriers.....	36
Figure 15 Q17 Individual barriers.....	37
Figure 16 Q18 Interventions to enhance KT engagement	Error! Bookmark not defined.
Figure 17 Timeframe and stages for Cycle 2.....	45
Figure 18 Timeframe and stages of Cycle 3	84
Figure 19 Truncated stages of the mini-Cycle.....	137
Figure 20 Resulting AR thesis Cycles.....	149
Figure 21 School level income recognised between 2011/12 and 2013/14 academic years (excluding MISIS recognised income @ £1.7m).....	194
Figure 22 Income recognised by Departments within the School of H&E – 2011 to 2013/14 academic years (Excluding MISIS recognised income @ approx. £1.7m).....	195
Figure 23 Changes to awareness of the R&IS	198
Figure 24 Changes to awareness of KT	199
Figure 25 Has the R&IS encouraged you to be more engaged in KT	199

List of photographs

Photograph 1 Applying initial thought notes to the board.....	104
Photograph 2 A full board of notes.....	104
Photograph 3 Example of a group discussion.....	105
Photograph 4 Example of 'categories' emerging.....	105
Photograph 5 Voting on the second question for embedding actions.....	106
Photograph 6 A group of participants of ARG2	138
Photograph 7 Group 1 action plan.....	141
Photograph 8 Group 2 action plan.....	142
Photograph 9 Group 3 action plan.....	143

Abbreviations

AR	Action Research
ARG	AR Group
BCI	Business and Community Interaction
CIA	Central Intelligence Agency
CIPD	Chartered Institute of Personnel and Development
CPD	Continuing Professional Development
DBA	Doctorate in Business Administration
ECR	Early Career Researchers
H&E	Health and Education
HE	Higher education
HEBCI	Higher Education Business and Community Interaction
HERA	Higher Education Role Analysis
HoD	Heads of Department
HR	Human Resources
IDC	Indirect Costs
IP	Intellectual property
IPR	Intellectual Property Rights
KPI	Key Performance Indicators
KT	Knowledge Transfer
LSI	London Sport Institute
MU	Middlesex University
NGT	Nominal Group Technique
PAP	Professional Approvals Panel (Social Work)
PL	Principal Lecturers
R&I	Rewards and Incentives
R&IS	Rewards and Incentives Scheme
RAE	Research Assessment Exercise
REF	Research Excellence Framework
RKTC	Research and Knowledge Transfer Committee
RKTO	Research and KT office
SL	Senior Lecturers
SLT	Senior Leadership Team
SM	Survey Monkey
STEM	Science, Technology, Engineering and Mathematics
TTO	Technology Transfer Office
UCL	University College London
VC	Vice Chancellor
VR	Voluntary Redundancy
WP	Work Programme

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Dedication

“The purpose of enquiry is not primarily to describe or interpret our world, to contribute to the fund of knowledge in a field, to deconstruct taken-for-granted realities, or even to develop emancipatory theory, but rather to forge a more direct link between intellectual knowledge and moment-to-moment personal and social action so that enquiry contributes directly to the flourishing of human persons, their communities, and the ecosystems of which they are part.”
(Reason and Bradbury, 2001)

This thesis is dedicated to Nadia and Lily for their love, and particularly to Debbie for the sacrifices she has had to make to support me, allowing the opportunity to persevere with my research despite the major health challenges she has faced.

Abstract

This research project considers approaches to enhancing the engagement of academics with Knowledge Transfer in UK Higher Education. The research, undertaken within the Health and Education School of Middlesex University, utilised an innovative approach through the application of an Action Research (AR) framework in supporting personal and organisational development. Through insider-researcher led AR Cycles, knowledge and theory was developed co-productively, leading to the development, implementation and embedding of a Rewards and Incentives Scheme (R&IS) to enhance academics' engagement with KT. The research involved the use of on-line surveys, in-depth interviews and Action Research Groups to engage academics as participants in the process.

Original contribution to the field is demonstrated through outcomes of the application of a highly reflexive AR framework, including higher level reflection at each stage of several AR Cycles, culminating in the expression of theory and thinking at a meta-level of learning. AR offered an innovative approach to engaging academics in KT through shaping and implementing policy as part of participatory approaches, culminating in the R&IS. The thesis itself adopts an innovative structure to reflect the AR framework utilised.

Within the limitations of generalisability of an AR approach, the research findings are of value in a wider context, suggesting that:

- The motivation to engage in KT involves a complex mixture of intrinsic and extrinsic factors, but in this particular study it was largely influenced by intrinsic factors such as having a positive impact in society
- Academics in the health and education sectors may not respond positively to commercial-style descriptors of KT and econometric measures alone would not be a true reflection of KT activity levels
- AR can be an effective approach to support management-led interventions and change management around a specific objective
- Rewards and incentives could play an effective part in management initiatives to engage academics in KT.

1.0 Introduction

This thesis reports on a doctoral research project that has two main aims. The first is to establish approaches to enhancing the engagement of academics in a UK university in Knowledge Transfer (KT) activities. The second is to explore the use of an Action Research (AR) framework in supporting organisational development within academic research at doctorate level. In addition, an attempt is made to adopt an innovative structure and content for the thesis, which better reflects the nature of AR activities that have been undertaken.

The rise in importance of KT within the higher education (HE) sector, its nature, strategic relevance and levels of activity in the UK are explored within the evidential literature review of Appendix 1. Government and various funding bodies have given priority to demonstrating impact within society of HE-based research, for which KT offers obvious benefits. Yet there remains evidence to suggest that there are various barriers to engaging academics with KT. As a practitioner–researcher, my own experience would suggest that there are a number of reasons for this reluctance to engage. These are outlined in the Appendix 1 review.

1.1. The nature and relevance of KT to Higher Education

‘Knowledge’ in this context is used in a broad sense to include all forms of tacit and explicit knowledge generated within and by an organisation, including from interaction with external entities. Schön (1983) built on Polanyi’s (1966) concept of ‘tacit’ to include knowledge developed in professional practice; the ‘knowing how’ rather than just ‘knowing what’. The concept of ‘exchanging’ knowledge between knowledge creators and ‘holders’ with users of that knowledge is a key element of this project.

As Western economies have largely moved away from a past industrial heritage to one harnessing their knowledge base, i.e. a ‘Knowledge Economy’ (Drucker 1968), academics have noted the role that Higher Education (HE) could play in that transition (Etzkowitz, 1998). Gibbons (1994) noted the relevance to the sector of ‘Mode 2’ knowledge development which was applied contextually, usually external to the university, was demand-led, entrepreneurial and tested in real-life situations. Hargreaves (1999) extended this to suggest Mode 2 knowledge could be explicitly utilised by Government and commerce and would evolve within a practice context.

The concept that the state could utilise university research output to stimulate and/or enhance regional and national commerce and wealth generation from leveraging investment

funding is not new. The Morrill Acts of 1862 and 1890 in the USA set up the Land Grant colleges with a brief to bring technological advances in agriculture and the mechanical arts into society (Morrill Acts 1862, as referred to in Cross, 1999). Many UK Universities have a long tradition of engaging with local, regional and international economies, including collaboration in research and education delivery with business and commerce. However, there has been a notable shift in emphasis over the last 20-30 years by successful UK Governments to stimulate and then expect the UK Higher Education sector to play an active part in economic growth. Etzkowitz (1998) termed this a 'second academic revolution' and suggested that the university sector had willingly embraced this opportunity for economic and social development as a 'mission'. Johnston et al. (2010) noted that this had impacted on the HE sector in the UK, generally regarded as inward-looking. Universities had developed a greater focus on a more "proactive, enhanced and interactive role in influencing and transforming their local communities and regions" (p.542) and, further, that such an approach "has encouraged many HEIs to shed the image of the 'ivory tower', reaching outwards towards a more interactive multi-level partnership working in the delivery of policy-relevant research activity" (ibid). Ozga and Jones (2006) noted the demand from policy makers for "more and better transfer of knowledge locked up in research" (p.3), suggesting that such activity had become part of a broader commercialisation and economising of HE. Further (ibid) that universities had responded to the UK government's desire to exploit the scientific knowledge base for innovation and economic competitiveness noting that many HEIs had become willing contributors to that policy, particularly with public funding becoming more constrained leading to an alternative model of academic entrepreneurship that encouraged commercial exploitation of research. Hughes and Kitson (2012, p745) noted that universities were "perceived to be key economic drivers of the 'knowledge economy', stretching beyond the twin core missions of teaching and research to play a key strategic third mission through a range of wealth-creating impacts based on the commercialization of knowledge." The Higher Education Funding Council for England refined its intent in this respect as:

"We are committed to enhancing the contribution higher education (HE) makes to the economy and society." (HEFCE, 2014a).

The rise in importance of KT within the HE sector, its nature, strategic relevance and levels of activity in the UK are explored within the evidential literature review of Appendix 1. In this context, KT has been described as "a process of systematically organised exchange of information and skills between entities in order to facilitate and strengthen links between

them” (Wang et al., 2004, as sourced from May et al., 2006, p.16). The term ‘transfer’ may imply a one way direction of travel from university to external organisation but it is meant to recognise that new knowledge development and its application are the result of partnership between HEIs and the wider commercial, public and civil sectors. Meyer-Krahmer and Schmock (1998) recognised this by emphasising that the exchange of knowledge between entities was more appropriately considered as a bi-directional flow. “Knowledge Exchange is a two-way process where social scientists and individuals or organisations share learning, ideas and experiences.” (ESRC, 2014a). The aetiology of KT is also a complex issue as it covers such a broad range of possible ‘interactions’ between HE and external organisations/collaborators. KT is otherwise termed Knowledge Exchange (KE), academic engagement (Perkmann et al., 2013) ‘business’, ‘entrepreneurship’, etc. but would include: consultancy, contract research, personal mobility/training, community/people based activity, joint/collaborative research and commercialisation. (Abreu et al., 2009; Olmos-Penuela et al., 2013; Hughes and Kitson, *ibid*). As the concept of KT or KE as a separate academic endeavour developed, a House of Lords Select Committee termed it ‘third leg’ or ‘third stream’ (2002/3), a term which, loaded with inference, has remained in the lexicon of HE.

The relevance to HE policy and direction is illustrated by the range of government supported enquiries, working groups and reports that have transpired over the last 15 or so years. Figure 4 of Appendix 1 provides a timeline schematic showing the rise in relevance of KT, from initial funding support of the Teaching Company Scheme (TCS) (now Knowledge Transfer Partnerships, KTP), through reports: Lambert (2003), Sainsbury (2007), Wilson (BIS, 2012) to Witty (BIS, 2013) all of which have sought to enhance and support collaboration between HEIs and external organisations. Government has provided pump-priming funding, all now coalesced into the Higher Education Innovation Fund (HEIF) which establishes an annual budgetary allowance to all HEIs based on a complex performance related formula (HEFCE, 2014a). HEFCE now recognises various aspects of KT in the guidance accompanying the annual Higher Education Business and Community Interaction Survey published by the Higher Education Statistics Agency (HESA, 2014).

Of particular note has been the drive within HE to demonstrate social and economic impact as a result of funds provided for research. This is demonstrated by the requirement in most UK research council fund applications to show ‘pathways to impact’ (RCUK, 2014b) and the assessment of impact as part of the Research Excellence Framework 2014 (REF: HEFCE, 2011).

1.2. Relevance of KT within Middlesex University (MU)

In common with many in the sector, MU has had several 'phases' of response to expectations from funding bodies to engage in KT, having also recognised the potential for generating value from such activity. Through various iterations over the years, some funded through HEIF, MU now has a centralised Research and Knowledge Transfer Office (RKTO) able to provide support, guidance, governance and direction, including a lead through the Director of Knowledge Transfer.

In 2012, the University embarked on a new corporate strategy that aimed to build its research profile. As part of this strategy, the University has prioritised developing KT income and relationships with external organisations. In addition, academic role descriptors and profiles have been significantly reviewed including for an expectation that academic staff will be able to demonstrate progress in KT development.

Whilst not overtly referred to in the Corporate Plan as KT, the same plan seeks to encourage community engagement, income generation and courses demanded by stakeholders – all aspects of KT (Middlesex University, 2014a). A key objective is to raise the level of research and KT income and to develop stronger links with industry. In some ways, KT would also directly and indirectly influence other corporate objectives such as 'Enhancing Student Achievement' (through building links with employers and placement opportunities) and research growth (assuming KT activity leads to research developments). The University requires that each School establish KT income targets on an annual basis. KT is reflected in the common template used by Schools as part of the annual planning and quality monitoring processes to demonstrate achievements.

The School of Health and Education (H&E) has a long history of engagement in KT. In a previous incarnation, Health and Social Sciences, a Business Development Unit was established which I ran as Associate Dean, Business. Key personnel and functions of this group were transferred to the newly formed centralised RKTO. Due to the focus of many of its programmes on professional practice, H&E has had significant success in terms of KT, mainly within the areas of Continuing Professional Development (CPD), consultancy and some contract research. KT is also recognised as having a symbiotic relationship with research as part of the School's Research/KT Strategy. One could expect, therefore, that with such success KT had been accepted as a valued part of the academic portfolio. However, that would not be

the case as there remained a significant difference in the acceptance of KT amongst academic groups with reasons varying from; suspicion that income generated was being siphoned away to the 'centre', worries about commercialisation of research, concerns that KT was not a valued 'academic pursuit' and that valuable staff resources were being deflected away from teaching and/or research. Differences in acceptance of the value of KT between academic disciplines was supported by Ozga and Jones (ibid, p.7) who, in referring to the linear approach of the past to KT (research-developed IP leading to a direct commercial output) suggested that this showed policy makers had a lack of understanding of the nature of knowledge and that "this limited commercialised discourse may distance rather than attract academic engagement with KT, especially in social sciences, arts and humanities". This is a theme which is explored further in Appendix 2.

At the time this research project was conceived, REF 2014 guidelines had been published and these appeared to provide a positive motivation for the utilisation of KT outputs as impact case studies, raising its profile and recognition in the sector and beyond.

1.3. The use of an Action Research Framework

The thesis considers the use of AR as a framework for assisting managers within a modern university to develop, implement and evaluate interventions of a more participative nature devised as part of a longer term doctorate level research study. The research is co-productive and co-constructive of knowledge, built on a highly reflective model and focused on personal and organisational development. The justification for the utilisation of an AR approach is evidenced in Appendix 2. This provides a literature review of the nature of AR, its conceptual underpinnings, its application in this context and ethical and quality assurance considerations. Appendix 2 also provides the conceptual model used for the research, as summarised in section 4.6.

The thesis is structured around a series of three AR project Cycles that emerged and developed through the process. Each Cycle has the same component stages, as shown in Figure 1. These stages are underpinned by an evidence base, as in the relevant Appendices. These should be read in conjunction with the Cycles indicated in the text. To ensure that sound ideas and best practice are fully referenced, selected key aspects of the literature underpinning the research are included within the individual Cycle chapters.

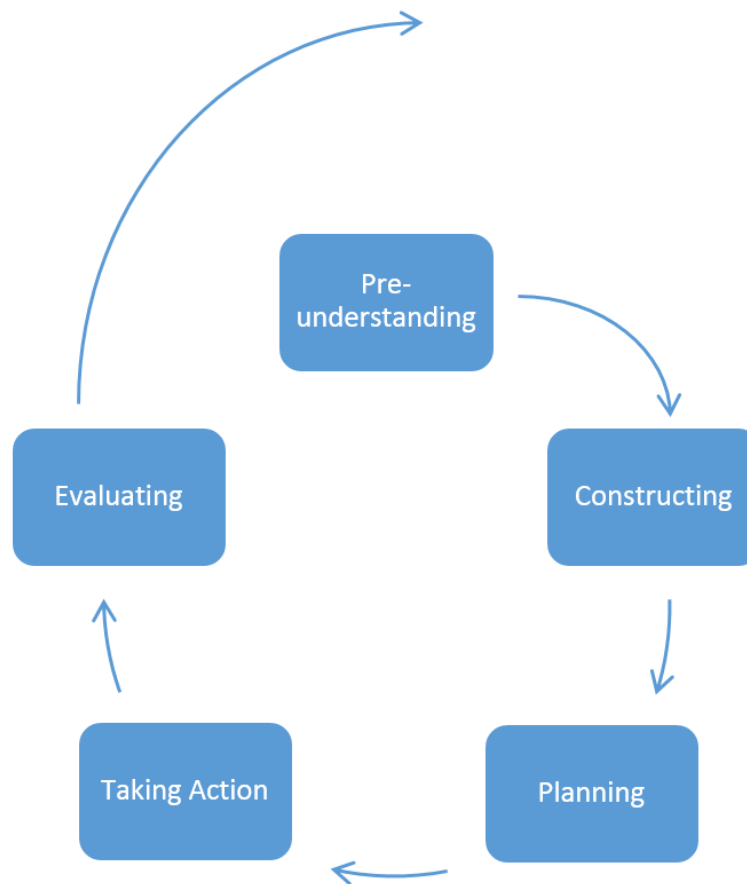


Figure 1 AR 'Cycle' – based on Coghlan and Brannick (2010)

Within each AR cycle, the stages include:

- Constructing- assimilation of knowledge regarding the Cycle topic and developing an understanding of the nature of content of that Cycle, together with reflections on participant engagement in establishing appropriate parameters.
- Planning – developing the research approach for that Cycle.
- Taking action – implementing the research approach.
- Evaluating action – evaluating actions in light of the overall objectives of the Cycle and initiation of further Cycles.

In an ideal form, the AR Cycles are connected as in Figure 2. The nature of the AR process means that it is neither feasible, advisable nor appropriate to plan the research Cycles in advance: each emerges from the previous in an iterative fashion. Figure 2 is a rather ideal and

simplistic depiction in comparison to real-life AR. Within some Cycles, the research spawns a mini-Cycle leading to additional complexity, as seen in Cycle 3 of my research.

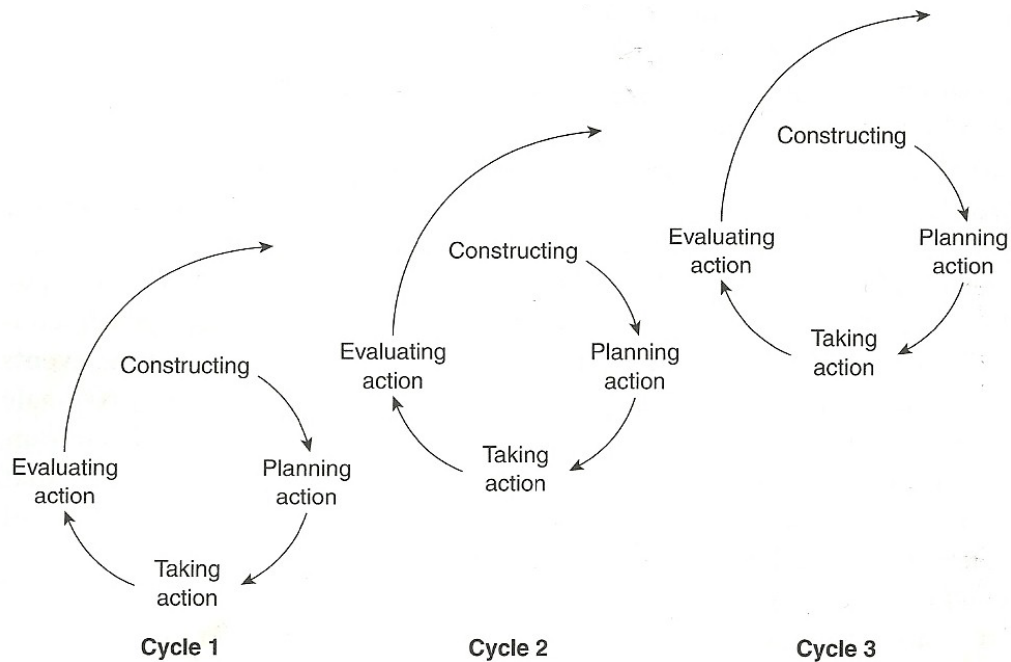


Figure 2 Connection between the AR Cycles (Coghlan and Brannick, 2010, p.10)

Coghlan and Brannick (2010 and 2014) suggested that there was a ‘pre-understanding’ element to each Cycle, as noted in Figure 1, where the researcher brings pre-existing knowledge and experiences to the Cycle. Rather than follow this approach, and in order to provide a clear progression between the Cycles, at varying scales and ranges, as necessary, I have included a transition section which bridges between the successive Cycles to aid an understanding of the flow of the thesis. Each transition phase incorporates the pre-understanding stage of the next Cycle. In the case of Cycle 1, the transition to the first AR Cycle is from the research undertaken as part of the research proposal stage, fully documented in Appendices 1 and 2.

A selection of research approaches that make up the ‘family’ of AR is outlined in section 4.3 of Appendix 2. This research was undertaken whilst I was a senior manager responsible for the development of KT across the entire School of Health and Education (H&E or ‘the School’) at Middlesex University (MU). This role posed certain insider–research issues that are explored later in this thesis. It also impacted on the nature of the AR approach adopted, given that the project had to be undertaken within the constraints of my role and responsibilities within the organisation. If one considers approaches to AR on a spectrum of levels of participation of those engaged (i.e. staff within H&E), the research has elements of a consultant-led approach

for initial project cycles, then moves towards a more participative approach in the final project Cycle.

A further innovation in this thesis is the provision of a highly reflective commentary of the research process and practice at each stage of the AR Cycle. This parallel reporting has been placed in commentary boxes relevant to each stage of the Cycle, entitled **Learning in Action**. This commentary was written contemporaneously with the research process and the narrative style reflects this, particularly in its use of the present tense and first person. It is displayed in a box and comprises reflections during and about each Cycle, also signposting the aspects that influenced thinking and theory development at a higher, 'meta' level, as reported in Chapter 6. Coghlan and Brannick (ibid) provide a structure to the different elements of reflection that, it is suggested, could be undertaken at each stage. These have been used to create a standard series of sub-headings to each **Learning in Action** section, as follows:

Learning in Action

- * Experiencing – what were my key learning experiences?
- * Understanding –how did I 'make sense' of these experiences?
- * Judging – what conclusions did I come to and how did this impact on my views/knowledge?
- * Acting– in what key and new actions did this element of the process result?

The use of these two frameworks (the four-stage AR Cycle and the four-part reflective commentary) inevitably gives rise to a highly structured thesis. Using the model proposed by Zuber-Skerritt and Perry (2002), illustrated in Figure 3, Chapters 2–6 of this submission make up the core AR Cycle 'projects' and follow a similar format, whilst Chapter 6 provides the 'meta level' interpretation and analysis. This structure helps guide the reader through a complex research process and aids cross-referencing.

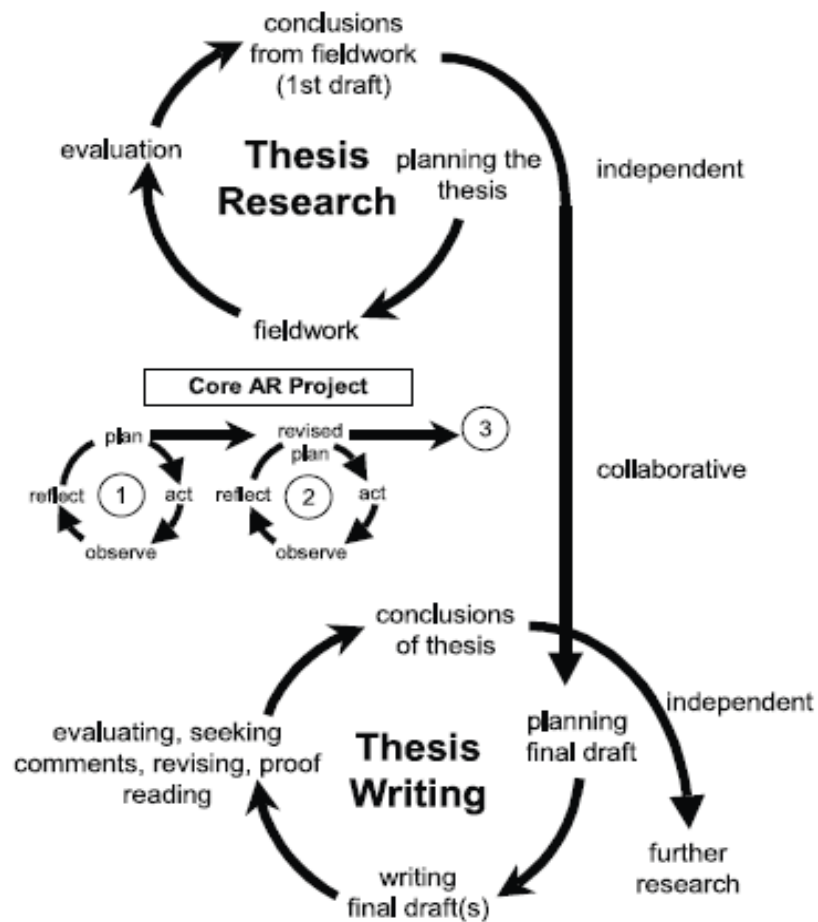


Figure 3 Thesis Action Research Cycle (Zuber-Skerritt and Perry, 2002, p.177)

T1: TRANSITION PHASE 1 – FROM RESEARCH PROPOSAL TO CYCLE 1

As part of the research proposal, a literature review explored the role of KT within HE and MU specifically and noted that the extant research identified various barriers to engaging academics with KT. The growth of KT activity was an objective for MU, the School of H&E and for me personally, as a senior manager with responsibilities in this area. It was, thus, an organisational and personal aim to undertake research that would illuminate the barriers to engaging with KT at a School level, consider interventions to address such impediments to engagement and, at the same time, enable thesis-level study towards the DBA. The initial research proposal (presented for MBS5060) also considered the nature of the research approach that might be used to achieve these aims and resulted in the proposed use of an AR framework.

As part of the research proposal, various potential interventions had been suggested as AR Cycles. One such intervention was the formulation of various specialist business-related units at Departmental level to spearhead the development of KT. This was additionally driven by a proposal to use my research as part of the induction of the Education Department to H&E, given that it had a unit in development. This set the direction for the first Cycle with the aim of focusing on the introduction of such units within the School. However, I had little evidence that this approach would be welcomed by the School and be valid in terms of a greater enhancement of KT activity. In addition, the literature had not specifically identified this approach as appropriate, apart from the need to establish enabling support for academics to take advantage of KT opportunities. This uncertainty about the initial intentions led to a revision of the intent of Cycle 1.

2.0 Cycle 1: Establishing the Impediments to H&E Academics' Engagement in KT

Based on my tacit and explicit knowledge, and supported by reference to literature, this chapter uses an AR approach to consider the key factors that might impact on an academic's motivation to engage or enhance their engagement with KT.

The stages and dates of Cycle 1 are shown in Figure 4:

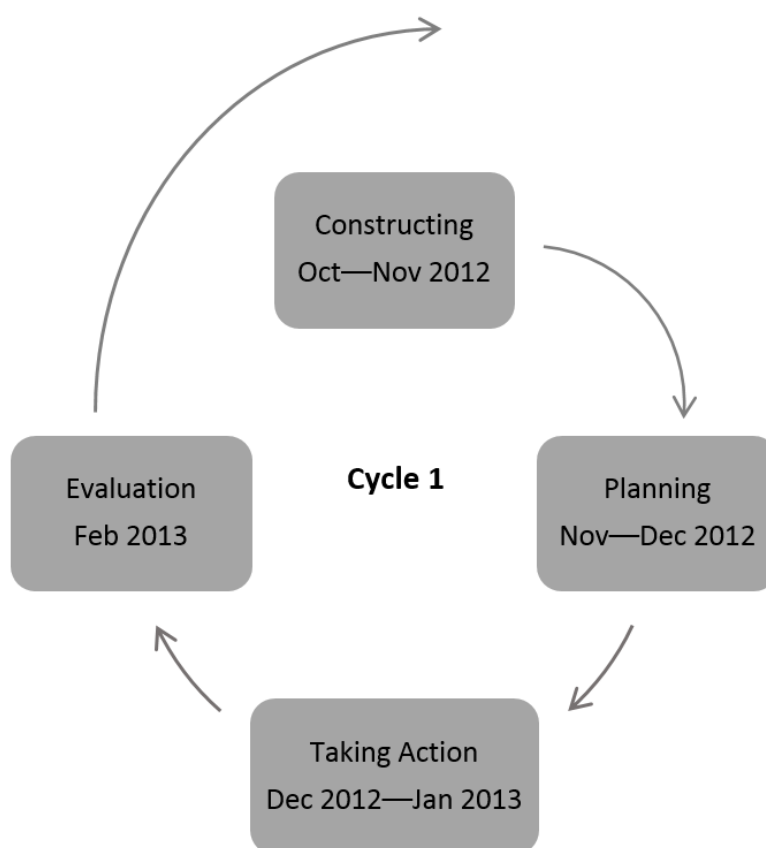


Figure 4 Timeframe and stages for Cycle 1

2.1 Constructing

This section briefly reviews key known antecedents to engaging academics in external activity, based on the literature review in Appendix 3, and outlines the design and implementation of a survey used to enhance knowledge of such issues within H&E.

2.1.1 Introduction

Appendix 1 details the growth of KT inclusion in academic policy and practice and notes that there are few empirical studies demonstrating antecedents to engagement in this activity. As Van Looy et al. (2011, p.554) found:

“despite a growing awareness and a vast body of empirical evidence that universities can contribute to the development of local economies, the evidence on antecedents of successful engagement in entrepreneurial activities at the level of universities is more fragmented.”

Adding entrepreneurial objectives as a third component to universities’ mission has been described as a ‘second academic revolution’ (Etzkowitz et al., 1998). This may have led to KT being labelled third stream, in initial Government interventions. Etzkowitz et al.’s research revealed significant correlation between collaboration with the commercial sector and enhanced research outputs. Yet my experience, and that of others, suggested that engagement in KT was not universal or indeed accepted as part of an individual’s academic portfolio.

An oft-stated resistance to engagement in KT by academics was that this might deflect academics from traditional research activities (D’Este et al., 2013; Tartari et al., 2012). These claims were acknowledged and dismissed by Siegel et al. (2007a), who suggested that current empirical evidence revealed no such trade-offs but, conversely, significant positive effects. Whilst noting that research had focused primarily on senior research active academics, Van Looy et al. (ibid) suggested that there may be a positive relationship between some KT, such as contract research, and more traditional research, possibly due to the similarities between them: KT returning income for investment in research and sharing the objective of advancing knowledge through knowledge creating activities. Synergies between KT and research were clear from my experience within academia, with research outputs leading to contract research opportunities or consultancy leading to a higher profile, attracting research funding. Both patents and research papers can result from the same research effort (Breschi et al., 2005). The profile of KT had been raised through the ‘impact’ expectations within the 2014 REF (Research Excellence Framework) and ‘pathways to impact’ requirements in UK Research Council bid requirements. Successive governments’ promotion of KT as an academic activity had met with varying levels of engagement, partly as a result of the core missions of the various universities, and the attitudes and motivations of academics.

In my role as a manager responsible for enhancing KT performance, there was a need to establish the reasons why KT may not have been universally applied and to use Cycle 1 research to unearth relevant knowledge of this activity and of the main impediments to engaging in KT within H&E.

2.1.2 Antecedents of external engagement – individual characteristics, organisational context, institutional context

The justifications in Appendix 1 as to why HE academics engage with business/industry and the public and civil sectors indicated that the basis of this engagement was often determined by the nature of knowledge developed. Hughes et al. (2011) noted that initial research in this field was dominated by a focus on commercialisation of KT outcomes from research outputs (an econometric viewpoint), together with its potential to enhance research development. This large-scale study of arts and humanities academics reported low levels of engagement in commercialisation activities but high levels of participation in networks, public lectures and consultancy (ibid). The motivations for British business to work with academia were far from relating only to exploitation of inventions or patents. Hughes and Kitson (2012) showed that the ranking of reasons was: marketing, sales and support services, followed by innovation activities; human resources management; and logistics, procurement and operations. For social science KT support to external entities, the main focus was on marketing and related activities and human resource management:

“Improving business performance is not simply about innovation and technology, it involves the many and varied aspects of business organisation and strategy.” (Hughes and Kitson, *ibid*, p.742)

Appendix 3 provides a review of background evidence on the antecedents of external engagement. Perkmann et al. (2013, p.429) undertook a literature review on such antecedents and a key finding was that:

“academic engagement is a multilevel phenomenon, in the sense that it is determined by both the characteristics of individuals as well as the organizational and institutional context in which they work.”

Their diagrammatic summary is provided in Figure 5.

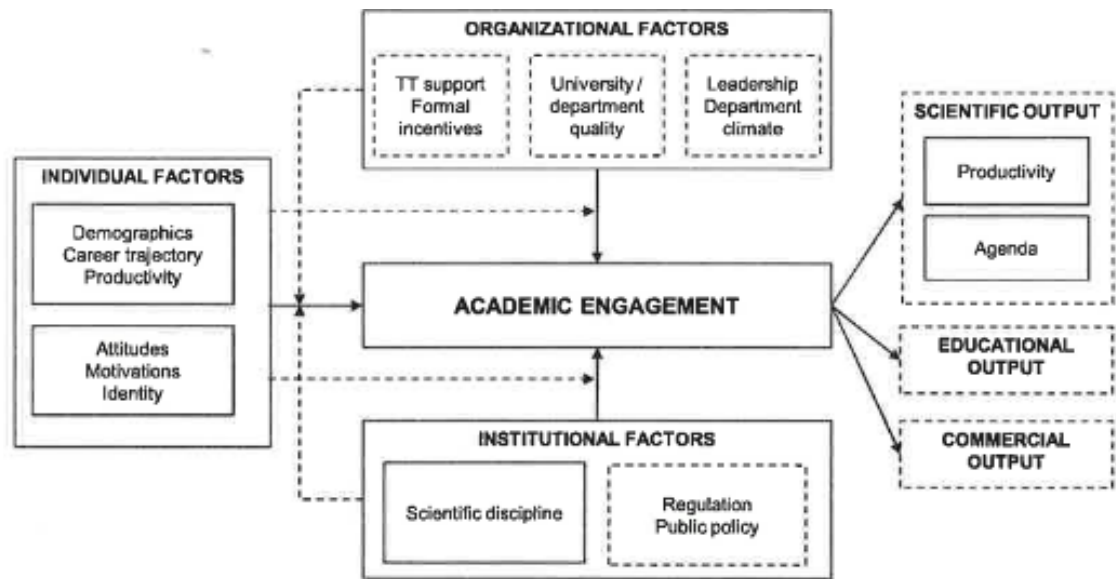


Figure 5 Analytical framework of external engagement by academic researchers identifying the relevant dimensions (Perkmann et al., 2013, p.430)

Considering the antecedent dimensions in Figure 5, two important areas emerged in terms of the importance of the individual and the organisation:

- Individual dimension – the individual academic’s understanding of the application of research to ‘users’ (clients) and consequent enhancement of research output (although there were limited correlations for some subject areas). Correlations might exist between successful research academics and their engagement in KT. Academics were motivated by the ability to test their research in practice (Perkmann et al., 2013; Tartari et al., 2012; Etzkowitz, 1998; D’Este et al., 2013; Lee, 2000).
- Organisational and Institutional dimensions – organisational structures and culture were important factors in how KT was embraced by the academic communities. A lack of clear institutional agenda, supported by management and leadership, was likely to have a negative impact on the prevalence and attention of academics to KT (D’Este et al., 2013).

Van der Heide et al. (2008) have further revealed that the organisation of HEIs to facilitate KT varies considerably, as indicated by how centralised support is organised:

- internally centralised – a unit which manages and supports all KT activity
- internally decentralised – KT activities devolved and spread across the organisation
- externally centralised – a separate university owned body responsible for achieving KT ambitions
- externally decentralised – the provision of independent bodies responsible for developing KT outcomes.

Most universities exhibited hybrids of these approaches. At MU, for example, there is a combination of these approaches dependent on the perceived nature of the KT opportunity. Van der Heide et al. (ibid) also identified that universities approached their strategy to KT in three distinct ‘missions’ to support:

- regional economic development
- research objectives and, more specifically, research staff accessing related funding
- knowledge exploitation and commercialisation for pure income generation.

2.1.3 Challenges/Barriers to engaging academics in KT

Appendix 1 refers to significant differences in the acceptance of KT amongst academic groups, even within H&E, a School that has been responsible for up to 60% of the total annual MU School KT financial income. Given the findings of Perkmann et al. (ibid), D’Este et al. (ibid) and Hughes and Kitson (ibid), the typologies of KT activity seemed to be influenced by academic discipline. Those with a strong research base in the social sciences tended to be less engaged in commercial KT than those with a technical/scientific research background where, for example, patenting of IP was more common, or areas with strong vocational/professional practice backgrounds (e.g. nursing/midwifery) where academics were versed in working on a contractual basis with external stakeholders. Ozga and Jones (2006) suggested that considering KT as a linear approach from invention to market may distance academics in the arts and humanities who would not identify with an overtly ‘commercial’ discourse.

In my experience, for those areas where there was a lack of engagement there were multiple reasons, including: suspicion that ‘monies’ were being siphoned away to the ‘centre’; that overbearing indirect costs were being applied; worries about commercialisation of research; concerns that KT was not a valued ‘academic pursuit’; and that valuable staff resources were being deflected away from teaching and/or research. Appendix 1 Figure 7 refers to the last HEBCI survey, demonstrating that only 10–15% of responding universities exhibited strong positive support for KT activities, the rest varying in terms of the barriers to that support. This

graph suggested an easing of barriers up until 2010/11, but a less positive situation subsequently.

Lockett et al. (2008) and Francis-Smythe (2008) noted a variety of barriers to academic engagement in KT within the UK:

- lack of time to be engaged
- lack of incentives
- that KT was subservient to research and teaching/learning – a third stream activity
- mismatch between expectations of academics and businesses
- inability to determine and measure outcomes of KT that might not fit financial reports.

Further, the research suggested that there were barriers at institutional and individual level, including a lack of investment by institutions in staff for KT and fears of bureaucracy. Wang and Lu's (2007) work in China also provided additional evidence of the importance of institutional support and related incentive schemes in achieving successful KT. Other research has focused on whether there is a type of academic who is more inclined to undertake KT and whether this points to a potential capability development issue. Francis Smythe (ibid) suggested a range of competencies for successful engagement of academics in KT. Bicknell et al. (2010) developed this further by considering the 'professionalisation' of KT academics, which they termed KT Academics (KTA). Interestingly, this identified the personal attributes and the values that attracted such KTAs to KT engagement (Appendix 1, section7).

Tartari et al. (ibid) and Perkmann et al. (ibid) referred to Mertonian barriers to engagement in KT, following Merton's (1973) assertion of strong differences between academics and industrial scientists or engineers. Merton considered that the key goal of academics was to discover and communicate new knowledge, the primary reward being recognition by the scientific community rather than commercial outputs.

Tartari et al. (ibid) noted two main types of potential cost, as perceived by academics, as follows.

Orientation barriers

The secrecy required by the industrial partner due to commercial confidentiality requirements restricts disclosure of research findings and dissemination, creating a threat to the norms of academic expectation for publication:

- subject skewing i.e. that in some way the collaboration would impose some form of constraint, restricting research to a commercially targeted approach
- difference in timescales, with industry looking for short-term solutions and research timeframes.

Transactional barriers

This refers to the ease with which universities cope with the technology transfer process. Bureaucratic requirements impose additional administration that is unsuitable to support the particular nuances of a knowledge exchange opportunity (Tartari et al., *ibid*: Siegel et al., 2004).

Hughes and Kitson (*ibid*) found that the most common constraints for academics with a restricted engagement with KT were: lack of time (cited by 65.9%); university bureaucracy (31.2%); and insufficient resulting rewards (28.7%). Interestingly, the same study investigated barriers within businesses and found that the most cited challenges were: internal capacity (they lacked the resources to deal with universities); the lack of ability to identify possible partners; and 'insufficient rewards' as a lack of incentive. The lack of incentives and rewards constituted a constraint to both academics and businesses. D'Este et al. (*ibid*) summarised a number of researchers' findings to suggest that there were critical reasons for lack of academic engagement with business:

- the perception that to engage with business will negatively impact on academic publication outputs
- that those interested in pure research may be less inclined to engage in KT activities
- a reluctance to disclose new inventions and ideas, as it may delay publication
- a hostility to any restrictions imposed by commerce on the breadth of research (i.e. being directed to a specific path of research).

Perkmann et al. (*ibid*) found that participation in commercialisation had positive effects on research productivity in that engagement in KT did not seem to have an impact in terms of refocusing research to more applied topics, and that there was limited evidence that relationships with industry necessarily led to restrictions in publishing research findings. Tacit knowledge may be more readily promulgated via KT through a different transfer mechanism than, for example, experimental scientific knowledge development (Van Looy et al., 2004). Tartari et al. (*ibid*) suggested different factors where acceptance of KT was prevalent:

- professional experience – where the academic had a hybrid work experience of academia and industry
- previous research collaborative experience
- an established development of networks and relationships with industrial partners that had built up important levels of trust.

2.1.4 Cycle 1 research aims

There appeared to be various cultural, academic discipline, management and motivational influences on academic engagement with KT (as noted in Appendix 1). In order to identify which were critical to engaging H&E academics in KT and to assess whether criteria similar to previous research findings were relevant, a questionnaire was designed and implemented through an online service, Survey Monkey (SM). The aims were to develop a survey to:

- provide an overview of current levels of understanding and engagement of academic staff with KT in H&E
- identify possible barriers to KT activity at institutional and individual level
- to aid in identifying priority future interventions for the next Cycles of the project.

The survey provided data to augment my own experience and knowledge in identifying appropriate potential interventions. For the purposes of this survey a ‘fixed’ (Robson, 2011) or ‘closed question’ (Bryman, 2012) design was used in the sense that:

- before data collection commenced the approach was chosen to be ‘fixed’
- ‘fixed’ designs are theory driven, and in this case the conceptual framework was based on my previous knowledge and relevant literature
- it was a hybrid between confirmatory, in that there was a great deal of knowledge about the mechanisms in place that were influencing attitudes and approaches to KT engagement, and exploratory, in that such a survey had not been undertaken at MU and there was no set assumption (or theory) against which results were to be tested
- it focused on the overall views of a group of academic staff rather than individuals
- I would be detached from those completing it, reducing influence in its completion.

The issues that were considered in the design phase are outlined in Appendix 4.

In addition to my personal knowledge, the survey utilised previous research into engagement of academics in KT to establish a series of questions.

Learning in Action – Constructing

This section reflects on the deepening of my knowledge and understanding of the KT literature and research approaches and methods.

Experiencing

In the literature review I had established some of the potential issues that may impact on the engagement of academics in KT. However, this was the first Cycle as part of the DBA which required me to consider more specifically how this issue was going to be investigated.

Although I had discussed in outline methodological issues during an earlier phase of the DBA programme, coming from a natural science background I found myself needing to establish a fuller understanding of qualitative research approaches.

Understanding

The literature review provided me with an informed basis of understanding of the engagement of academics in KT.

Consideration of the methods of enquiry was a significant learning experience for me and I undertook a short review of qualitative research, reported in Appendix 5. This enhanced understanding proved to be a bonus in terms of the judgement of research bids submitted within H&E for my approval as part of my duties as Deputy Dean.

Judging

The literature confirmed and, in part, authenticated my experience of the barriers to KT for academic engagement in KT.

Experiencing and understanding a new approach to research had a direct consequence on the nature of the research design. My use of parts of Abreu et al.'s (2009) survey questionnaire as a base, and my awareness of the need to undertake a rapid and thorough review of the predominant views of H&E academics, led me to use the University's Survey Monkey licence, which offered the attraction of a ready-made format.

Acting

I undertook a questionnaire based data collection within the School reflecting previous research of Abreu et al. (ibid), Francis-Smythe (ibid) and Lockett et al. (ibid), allowing for the possibility of comparison with their results.

2.2 Planning

This section describes the development of the Cycle 1 online survey.

The survey was designed to be a census of all academic staff in H&E (n=220), made possible by the relatively small number of staff and the nature of the School as a contained population. Participants comprised everyone who had a role predominantly in teaching, research, KT and/or managing such activity, identified from H&E's own HR database. The survey's aim was to identify the potential interventions that might enhance academic engagement with KT and to gauge the level of activity and attitudes to KT within H&E, itself formed in September 2012. The use of SM was chosen as it had certain advantages such as low cost, speed of data delivery, accessibility, rapid analysis and adaptation capability (as noted by Robson, (ibid)).

An initial pilot survey was released on 20th November 2012, focusing on a single intervention – the introduction of business units to enhance academic KT engagement. This had been one of my annual targets, thus fulfilling the need for a utility value of the DBA. The pilot survey was assessed by six experienced research colleagues with extensive knowledge of KT, who provided an informed view of its design and content with impartiality, as they were excluded from the main survey. Feedback from the pilot was positive, with compliments about the clarity of the questions, the language used and the overall tone. However, there were useful comments about assigning the survey so that the general questions about the participant came at the end and inserting a new section relating to consent to participate. Colleagues questioned the focus on a single intervention, believing this to be too restrictive and that more intervention opportunities should be considered. I concluded that selecting an intervention based on pre-understanding could be counter-productive to the overall research aim. This was a dilemma as the initial proposed Cycle had been linked to my performance targets.

Ultimately, I decided to re-design the survey to seek a broader view of possible interventions and re-negotiated targets with my Dean. To address concerns that staff may have felt compelled to participate, due to my position as Deputy Dean, the survey introduction made it clear that the work was for personal research and that colleagues were at liberty not to take part. It was stressed that the responses would be anonymised and confidential in order to maximise the trustworthiness of the data. It was noted, however, that summaries of responses would be available to those with access to the MU licence and that the CIA could trace any issues of concern to the USA Federal security back to the individual IP address. The introduction also noted that internal University ethical procedures had been followed.

The final survey design is in Appendix 6. It was designed to take approximately 15 minutes to complete in order to maximise the response rate amongst pressurised staff. Questions varied in their structure according to the nature of information requested. Some, such as 'role within MU' (Q2), were a straight tick box option; others sought opinions on aspects, such as the relevancy of KT activity to the participant (Q6) and offering a range of tick box answers from 'very' to 'no relevancy'; others utilised a Likert scale of possible responses, such as Q18 that asked participants to judge the helpfulness of several suggested interventions on a scale of 'no help' to 'very helpful'.

Participants needed to understand the questionnaire, particularly as it was a self-administered survey, and I was guided by the work of Robson (ibid, p.254) and Bryman (ibid) (Appendix 4) in the survey design. A short statement advised participants of the nature of the survey and its requirements. They were asked to give consent through a number of statements (see Appendix 7 for introductory statement and consents), including agreement for results to be used as part of my research and subsequent publications. Structurally, general information (sex, race etc.) were placed at the end of the survey. The first few questions were largely factual and straightforward to answer. More controversial questions (e.g. Work Programme allowances for Research and KT activity (Q9 and Q10), or relating to barriers to undertaking KT (Q16 and 17)), were purposely positioned mid-survey. Finally, the survey sought positive views on interventions that may support engaging academics in KT.

To facilitate efficient analysis, a comprehensive range of 'fixed' responses were provided, where appropriate allowing for a 'no response' and a few allowing narrative responses. All questions required completion in order for the next to be answered, apart from Q11 that asked if participants had worked with the Research and KT Office (RKTO) – if negative, participants could move to Q14. Finally, the survey requested indications from those interested in further involvement in the research.

Learning in Action – Planning

This section reflects on issues arising from the design of the questionnaire.

Experiencing

I found it challenging to design a fixed-format questionnaire addressing the key aims of the Cycle, incorporating in a clear way the issues around KT engagement. I found that drawing on extant literature and previous experience was helpful in addressing most concerns. My focus was ensuring construct validity: testing through a pre-run of the survey; allowing for some open comments where appropriate; limiting the timeframe to complete the survey to reduce drop-out and any maturation issues; and the choice of a census of the population rather than a sample. I designed the questions to be unbiased and avoid technical language where possible. As noted, a significant experience during the pilot was for a substantial refocus of the planned main survey.

Understanding

In addition to the learning gained in devising the questionnaire, my involvement of others as advisers at the design stage demonstrated the dangers of pre-empting a participative research process too early, either through personal bias or my adoption of management-set objectives. It also showed the value of participatory principles of AR in assisting the identification of the subject matter for Cycle 1.

The process led to a better understanding of how a proprietary system such as the SM could be used effectively as part of my research. I found its use straightforward and it provided a useful structure, but with inevitable constraints. The nature of such software exerts an influence on data gathering, and its design features can direct research design. Within the process of developing the survey, I was concerned that some participants might be challenged by issues of confidentiality and feel obliged to respond since I was the Deputy Dean and Principal Investigator. Inevitably, I had to consider issues of ethical appropriateness, survey design and application. This led me to take specific actions to ensure anonymisation of responses.

Judging

The reflection I undertook through the pilot led me to reframe Cycle 1, fundamentally changing the nature of the research. This was a valuable learning opportunity in terms of the support of a 'critical friend', as espoused by Zuber-Skerritt (2012) and my consultant adviser. I

could not avoid potential participants being aware of my position, but I considered that steps could be taken to ameliorate this.

Acting

I restructured the final survey to take on board the advice regarding:

- * placing questions that required information about the respondent (age, sex, length of service etc.) at the very end as good practice to ensure that these basic questions would not deter participants at the beginning of the survey or dissuade them from engagement
- * providing a consent agreement statement for participants to confirm
- * providing accompanying information that offered participants the opportunity to seek further advice about how the results might be used. Although already stated, there was a need for greater clarity about the survey being voluntary (an issue that originally emerged at the project transfer viva in terms of the impact of my seniority).

I amended the survey questionnaire significantly to accommodate various potential KT interventions rather than solely the business unit approach. Finally, I revised the survey questionnaire to include clearer statements to confirm issues of confidentiality, anonymity and ethics.

2.3 Taking action

This section describes the implementation of the Cycle 1 Survey.

The survey was released for completion by e-mail addresses to all School academic staff on 3rd December 2012 and closed on 2nd January 2013. A reminder was issued on 11th December 2012. Of the 220 staff to whom the survey was sent, several automatic absence responses were received as follows:

- 13 on annual leave, eight of whom until mid-January 2013
- two staff had actually left MU
- two staff were on long-term maternity leave
- one was on a long-term health absence.

Thus, the total population was 202.

In the original survey, no Heads of Department (HoDs) category had been provided and two had responded to an 'other' option category to the question regarding their role (Q2). This was found to have blocked further responses. The senior technician with experience of SM at MU could find no solution and so I amended the response roles for Q2 on 14th December 2012 to remove 'other' and include HoD. This was not ideal as the survey was in process but, as only six staff were affected and the two who had spoken to me had completed the survey, it was not thought significant. It transpired that both HoDs had completed as 'Head of Business Units'.

The Cycle 1 Survey analysis reveals that, of the 66 initial participants, 64 answered Q1 consenting to take part and 56 Q2 about their current role. Some 46 academics then proceeded to answer the rest of the survey. Thus, across the survey, the true completion rate is 46/202 i.e. 23%, representing a reasonable response rate. The high dropout rate within two questions was of concern, as it implied that twenty or so staff went no further (recorded as 'skipped'). In order to try to address the issue of non-response bias, the survey introduction had clarified the utility of gaining responses from all academic staff, irrespective of previous engagement with KT, although the literature suggested that those with experience or interest in KT were more likely to respond (Abreu et al., *ibid*). This led to a sub-question within the research as to how representative of the population (School academics) was the survey. The results analysis below demonstrates that some academic roles were poorly represented in the survey results, with a bias to Senior and Principal Lecturer roles and, overall, to a sample of participants with significant academic experience.

Q7, "Within the last academic year (2011/12), were you involved in any of the following KT activities", showed two issues that arose: First, although there was an 'other' option, three participants suggested a 'none' option should have been included. In addition, two participants noted they had not been at MU in 2011/12. This was not a relevant comment, as the question did not specify experience at MU. Both points could be clarified in any future similar surveys.

Learning in Action – Taking action

This section reflects on issues arising during the action stage, such as a high drop-out rate and a minor software impact on two participants.

Experiencing

The implementation of the Cycle 1 Survey ran smoothly, which I believe was due to the design and pre-testing. The Cycle 1 survey resulted in a reasonable response rate but a disappointing number of drop-outs after Q2. The design of the survey seemed to have blocked a small number of colleagues (potentially 6 HoDs) from progressing once they had entered their status.

Understanding

The significant drop-out after Q2 remained inexplicable. Anecdotal suggestions that further questions were too complex was not a likely explanation as participants could not have progressed to see the further questions without responding and the issues was not identified during the pilot. The lower response rate suggested that the study would now draw on a sample and not be a census, as intended.

Despite intensive work with technical support staff, I was unable to establish changes to the SM software to prevent the blocking of HoDs undertaking the survey.

Judging

The response rate, despite drop-outs, gave me confidence that the Cycle 1 Survey was of value and could guide the direction of my research for future Cycles. The previously noted Q7 responses confirmed to me how important terminology can be, particularly when carrying out research through a fixed questionnaire where it is difficult to provide further explanations due to the nature of the process. With respect to alleged over-complexity, this was not raised during the pilot survey and Abreu et al.'s similar 2009 survey of over 20,000 academics did not report such issues. Given the loss of the census approach, I chose to compare representativeness of the new sample with known characteristics of the whole School.

The number of individuals blocked from taking the survey was just two of a possible 220, but both were HoDs and I deemed it appropriate to have found a solution given the relevant information they might bring.

Acting

For any future surveys I would invest greater effort in including for a broader cross-section of academic roles.

Whilst I was concerned that authenticity might be impacted, I did make a minor adjustment to the survey to allow for the glitch with the two HoDs. This was mid-way through the response period but the impact on the total survey outcomes was negligible.

2.4 Evaluation

This section evaluates the outcomes of the Cycle 1 survey, comparing with the findings of Abreu et al. (ibid), Perkmann et al. (ibid), Francis-Smythe (ibid) and Lockett et al. (ibid), where appropriate. Findings from the survey are presented in a bar graph showing the responses of participants, together with commentary supported by a percentage-based overview.

2.4.1 Current academic roles

Figure 6 shows of the responses, 43% were Senior Lecturers (SL), 25% Principal Lecturers (PL), 14% Lecturers (L), 9% Professors, 3.6% Readers and 5.4% Heads of Business Units. There were fewer Professors, Readers and PL within the population, which may explain the higher response rate from SLs as they are more numerous. No responses were received from research or teaching non-lecturer support staff, or professional support staff. This may be due to the far smaller numbers of these staff, a reluctance to contribute or a bias towards responses from more senior staff. I would postulate that many of these staff may have not classed themselves as 'academic', despite a clear invitation to all.

In total, 56 responses were received, with 46 proceeding to further questions. Thus, in further questions the sample size was 46.

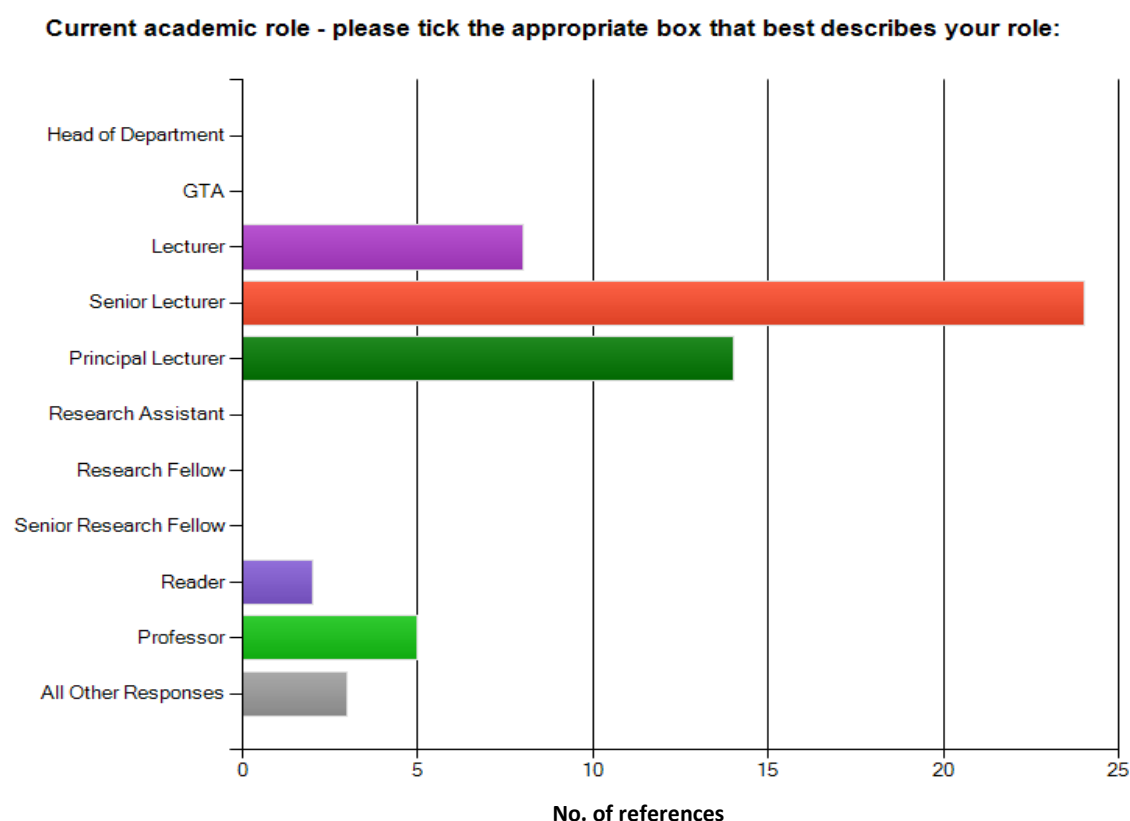


Figure 6 Q2 Role description of participants

2.4.2 Length of academic employment

Interestingly, 80% of participants had worked in HE for six years or more and 39% for 16 years or more, as seen in Figure 7, thus had significant HE experience and the majority were likely to have been mature. This correlated well with Q19 where 82% of participants indicated that they were 40 years old or older. This was also found by Abreu et al. (ibid), the assumption being that senior, and probably older, staff are more likely to interact with external organisations and more likely to reply to such a survey on KT issues. Perkmann et al. (ibid) reported that male academics were significantly more likely to engage with industry and that seniority seemed to be positively related to collaboration with external parties. Experience researchers were more likely to have well-established networks, hence more social capital, providing them with greater opportunities to seek potential partners.

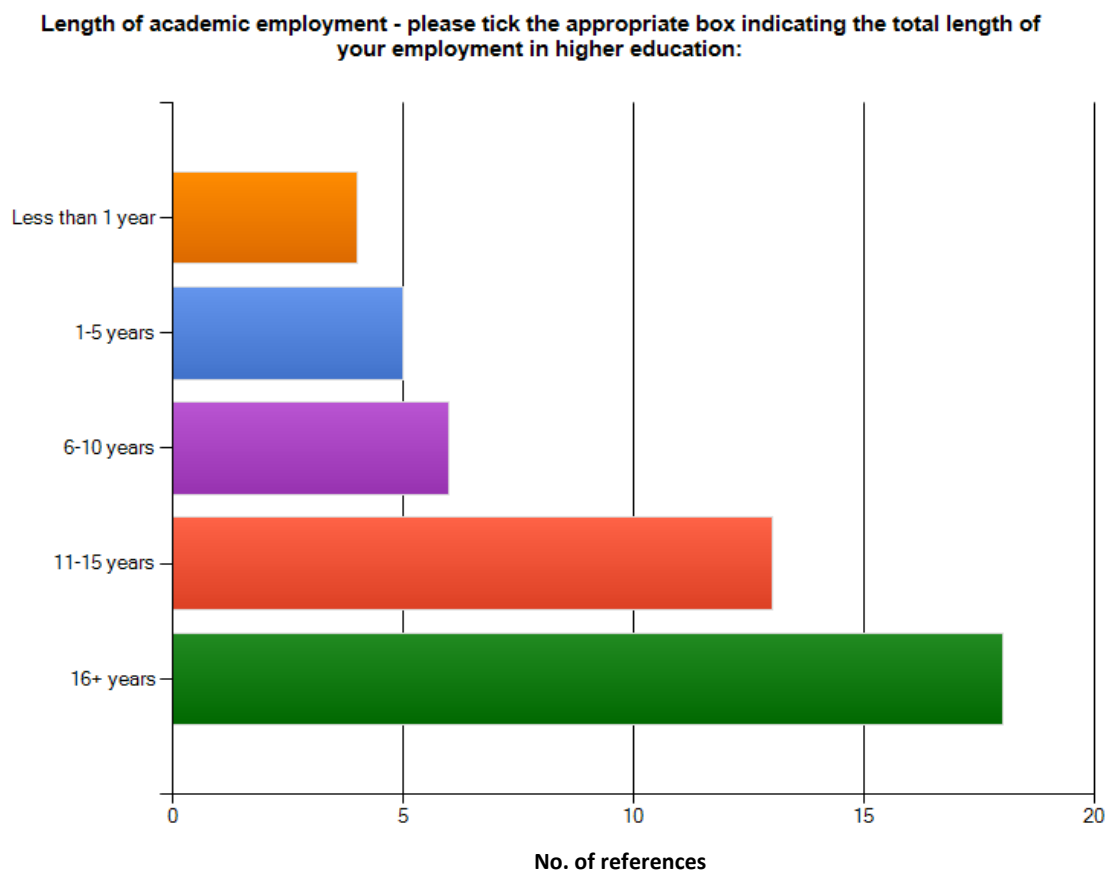


Figure 7 Q3 Length of academic employment

2.4.3 Relevance of KT to personal ideals, the organisation and the participant's own work (Q4, 5 and 6)

Over 67% responded that KT was relevant to their personal ideals of HE, with only 4% suggesting KT was not. The suggestion in the literature that a barrier to engagement in KT was that academics did not see it as an academic pursuit was not supported by this survey.

In Figure 8, it is shown that a significant 54% believed KT to be 'very important' to MU's corporate objectives, a further 39% indicating that it was 'quite important'. These responses suggested that the sample had an understanding of the role of KT at MU.

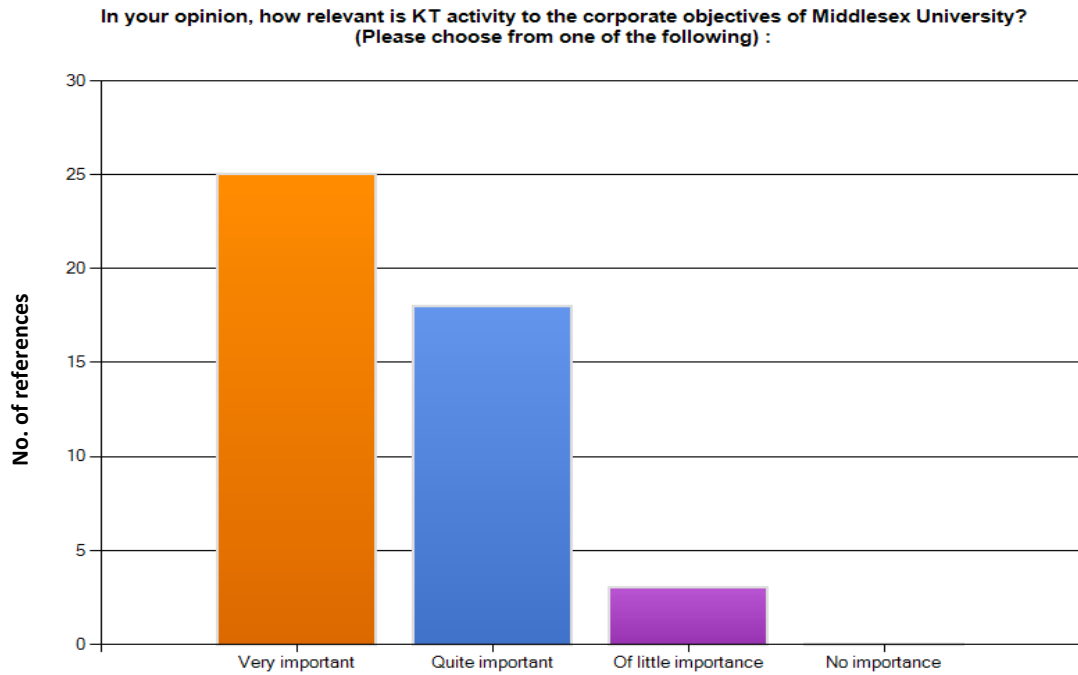


Figure 8 Q5 Relevancy of KT to Middlesex University

However, this view is slightly offset by over 54% of participants, as shown in Figure 9, responding that they believed KT was only ‘quite relevant’ to their current work. Indeed, over 15% suggested it had ‘little’ or ‘no relevance’, indicating an issue for further research.

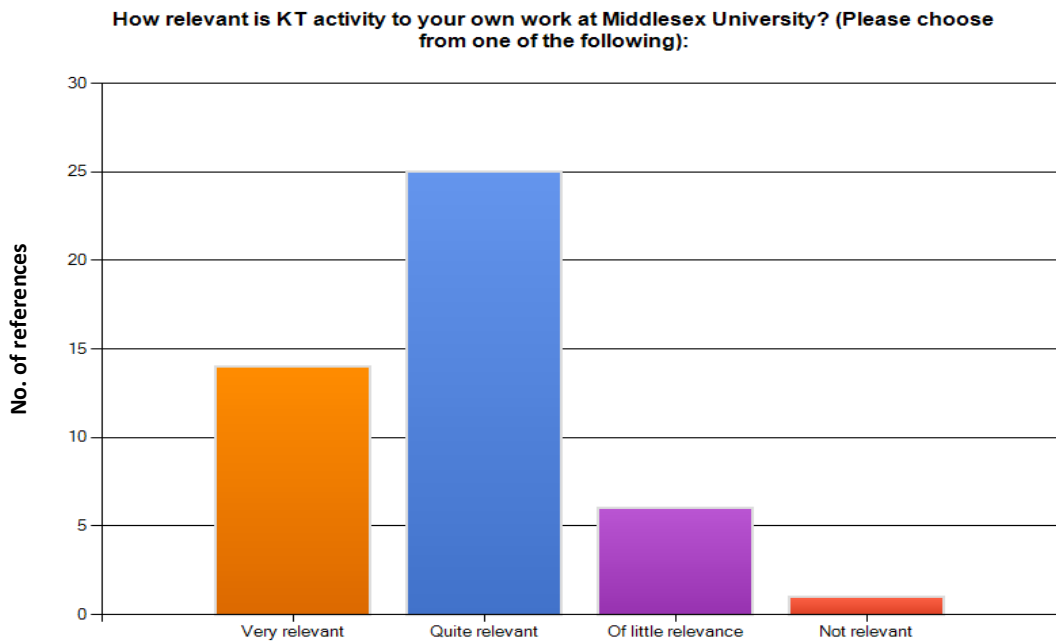


Figure 9 Relevance of KT to the individual academic

2.4.4 Nature of KT activity undertaken in 2011/12

Considering the bar chart of Figure 10, the most common types of KT activity undertaken in 2011/12 were employee training and CPD (54%) and consultancy (45%).

**Within the last academic year (2011/12), were you involved in any of the following KT activities?
(Please tick all that apply):**

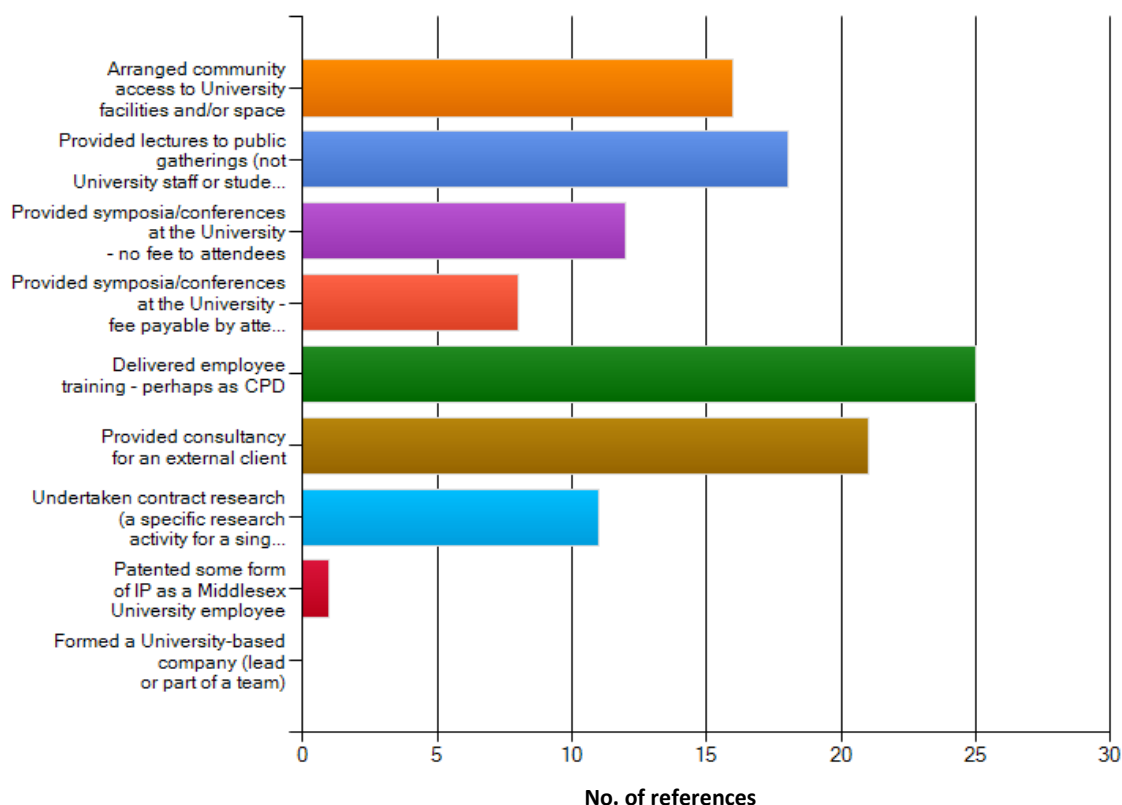


Figure 10 Q7 showing the nature of participant's KT activities

This was perhaps not surprising, given that the role of H&E is predominantly in providing education services to professions. Post-registration CPD is a key component of the offer in Social Work and Nursing/Midwifery, involving close ties with employers/industry and potentially resulting in enhanced consultancy opportunities. Community access and conferencing/symposium were also strong activities. That 24% of participants had been involved in contract research was perhaps surprising, since H&E would not have been expected to have a strong presence in an area generally related to a well-established research base.

Of little surprise was the low level of commercial KT activity (patenting of inventions and company spin outs, etc.). These were not significant strengths of MU, in particular H&E, indicative of a non-research-led modern university.

Of the 12 narrative option responses to this question, three suggested a 'none' answer option. 'Collaborative knowledge exchange arrangements' and 'Volunteer work of an academic nature for external organisations' were suggested as additions to any future survey.

2.4.5 Motives for being involved in KT in 2011/12 (Q8)

Abreu et al. (ibid) undertook a detailed survey by e-mail of over 22,000 academics across the UK. The bar chart in Figure 11 demonstrates the responses to similar motivation statements from my survey. The four most popular statements in the survey indicate, in order of importance (by mean score), that the motivation was in:

1. furthering my institution's outreach mission (3.81)
2. gaining insights into the area of my research (3.69)
3. keeping up-to-date with research in external organisations (3.54)
4. source of additional income for the Department (3.45).

If you have participated in activities with external organisations during the last academic year (2011/12), which of the following were your motives? (Please indicate the importance of each by grading each 1-5, 1 being of no importance, 5 being of high importance).

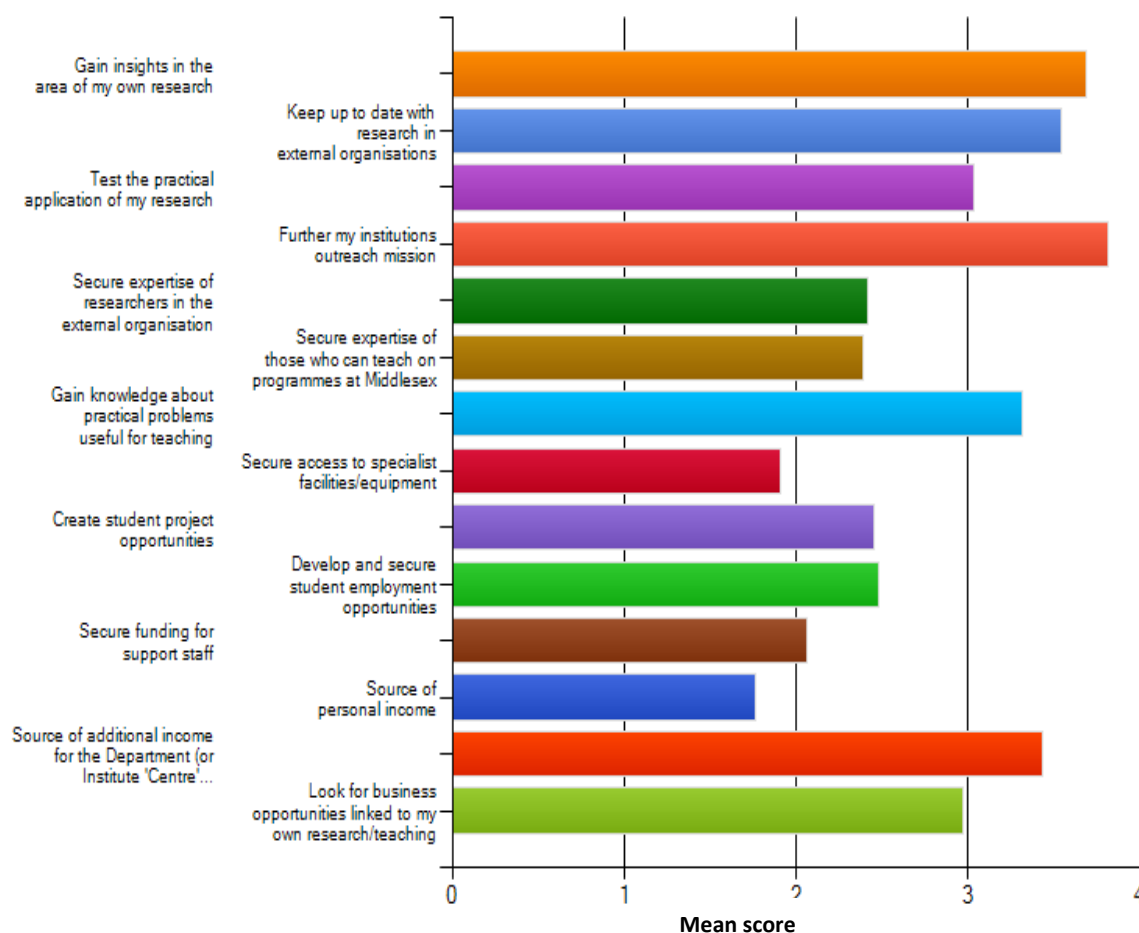


Figure 11 Q8 Motivation for participation with external organisations

There is a remarkable similarity with Abreu et al.'s (ibid) results, where the issues of most importance (by mean score) were:

1. to gain insights into the area of my research (4.0)
2. to keep up-to-date with research in external organisations (3.6)
3. to test the practical aspects of my research (3.5)
4. to further my institution's outreach mission (3.2).

This was surprising, since Abreu et al.'s (ibid) research, based at the University of Cambridge, used terminology more familiar in a research-intensive setting. One might have expected MU to have demonstrated a difference.

Free comments were limited (7) and three of these were actually covered by the items. Two related to reputation and job security which may indicate the influence of work-place uncertainty factors during the survey.

The role of incentives and rewards in enhancing KT engagement had been stressed by previous researchers (Appendix 1, s.7). 'Source of personal income' was the least motivating (means of 2.2 and 1.76 respectively) in Abreu et al.'s (ibid) and the current study. However, the statement 'Source of additional income for the Department' received a high mean score of 3.43 in this MU survey. This may indicate that incentives and rewards were important, but to the Department/Research Unit rather than the individual.

2.4.6 Research/KT Work Programme allowances (2011/12)

Q9 and Q10 sought to gain an insight into the time remission that academics may have been allowed for KT and research engagement. The high percentage of 'not applicable' responses (30% for Research and 32.6% for KT) indicate senior academics with specific roles (e.g. Professors on non-Work Programme grades). If PLs were Directors of Programmes, they may not have been expected to undertake either research or KT. The survey findings suggested that limited hours were provided in Work Programmes. Financial restrictions may be relevant (e.g. research allowances in 2011/12 were restricted to REF2014 submittable academics). Just over 17% of participants had some form of KT allowance. The 'free' answer opportunity on these questions showed that, for both research and KT, the number of hours varied considerably when sanctioned, from 0.5 FTE (probably KT-specific appointments) to a total of eight hours per annum. A comparison of these results with management information for Work Programme allowances across the School was attempted. Unfortunately, data were only available for the

previous School of Health and Social Sciences (HSSc), up to 2010/11, moreover one Department had consistently failed to provide data.

Table 1 Comparison of Work Programme Allowances for Research and KT at School, from 2010/11 & Cycle 1 Survey

Hours provided in Work Programme	School level %age of academic staff with allowance (Research) (n94)	Survey level %age of academic Staff with allowance (Research) (n10)	School level %age of academic staff with allowance (KT) (n17)	Survey level %age of academic staff with allowance (KT) (n7)
0–20	7	25	6	14
21–50	28	0	59	0
51–100	50	50	24	29
101–150	9	25	6	43
151+	6	0	6	14

Table 1 demonstrates limited ability to compare survey results with School-level Work Programme allowances. Similar patterns emerged, with most who received such an allowance gaining between 21 and 150 hours remission from their contracted 550 teaching hours. The survey results showed some similarities with moves to higher levels of allowance at the 51–100 and 101–150 hour bands (which may, again, have suggested participants were likely to be already committed to research/KT) but the number of participants to the survey who provided answers to these (n=10 for research hours and n=7 for KT hours) were small suggesting caution needed to be exercised.

2.4.7 Experiences of working with MU’s Research and KT office (RKTO) (Q11, 12 and 13)

Of the 46 participants, the 20 who had experienced working with the RKTO went on to answer related questions. These asked for some indication of both their activity level and knowledge of the support provided by the RKTO. Of those who had worked with the RKTO, 60% had done so on a frequent basis (6 times or more per year in 2011/12), and 25% on an occasional basis (3–6 times in 2011/12). This was significantly higher than that found by Abreu et al. (ibid), which was a total of 43% for ‘some contact’ with the equivalent of a Technology Transfer Office (TTO). Of concern was the 17% of participants who did not know about the RKTO (Abreu et al. (ibid)’s study recorded 21% in their national survey). The RKTO was established to provide close support and guidance for research and KT active staff, and it was clear that communication and information regarding their role needed to improve. It was encouraging that the 65% of participants who had worked with the RKTO had found this experience either ‘very positive’ or ‘positive’.

2.4.8 Impact of KT on enhancing research or teaching/learning

The survey sought to elicit information on how KT may have impacted on the participant's research or teaching and learning activities. Of those responding, just over 26% suggested that there had been a high or medium impact on research outcomes, as shown in Figure 12, compared with over 45% suggesting an impact on teaching/learning outcomes, shown in Figure 13. Given that nearly 22% responded that they were not research active, as noted previously this may suggest that those with an inclination for KT activity were more likely to have responded to the survey. In addition, given the prevalence of CPD/consultancy work in the recorded KT activities, it was no surprise that there had been more impact on teaching/learning outcomes. However, it is worth noting that half the participants responded that KT had 'limited' or 'no' impact on teaching/learning.

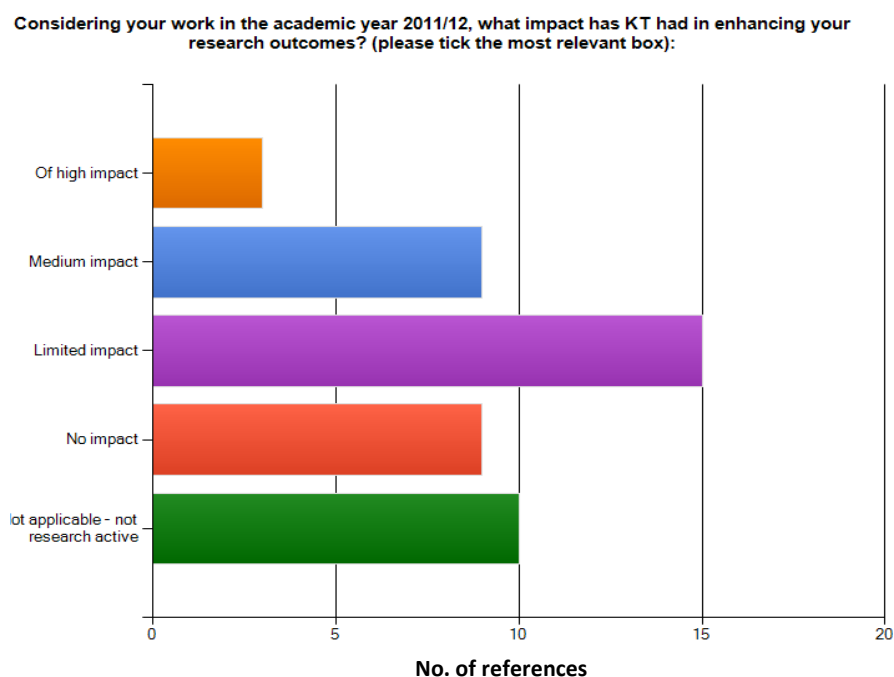


Figure 12 Q14 Impact of KT on research outcomes

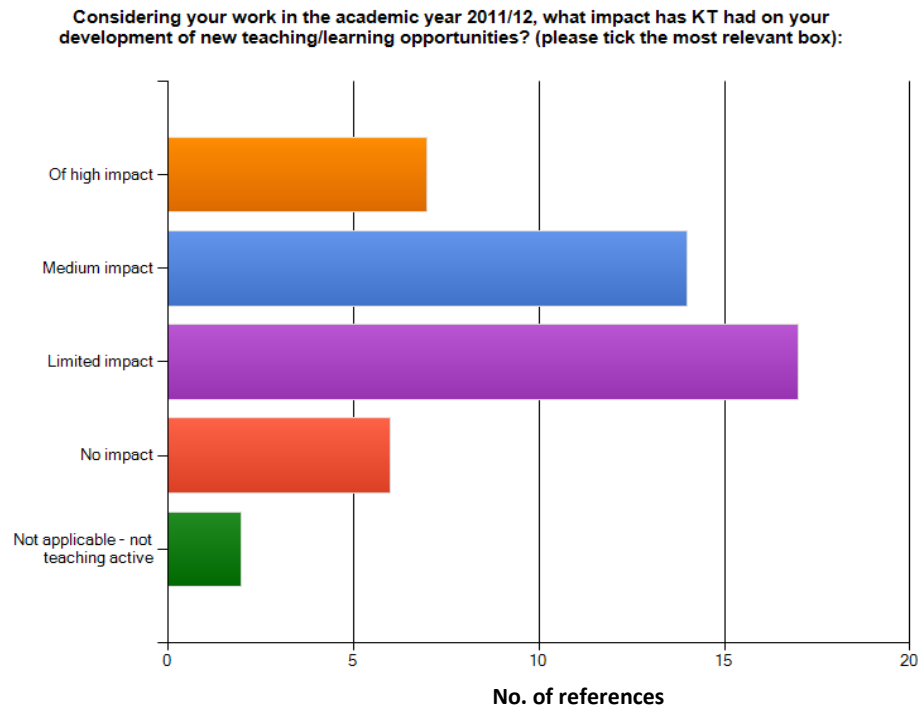


Figure 13 Q15 Impact of KT on Teaching/Learning outcomes

The survey identified a greater disconnect between KT, research and teaching outcomes than had been expected. In the Abreu et al. (ibid) survey, only 11% of all academics responding suggested there had been limited or no impact on research, compared with nearly half in my survey.

2.4.9 Institutional and individual barriers impeding engagement with KT

Q16 and Q17 provided statements by which participants judged the extent to which certain institutional and individual barriers impeded engagement with KT. These statements were based on the work by Francis-Smythe (ibid) and Lockett et al. (ibid).

At the institutional level, the top five recorded barriers and their mean scores were:

1. lack of investment in core staff to undertake KT activity (3.7)
2. difficulty for finding replacements for academics 'bought-out' of other duties (3.52)
3. the bureaucracy required to engage in KT activity (3.41)
4. unclear institutional process for supporting KT activity (3.41)
5. lack of flexibility in pricing structures (3.4).

Figure 14 gives the full responses, below:

According to previous research, the following aspects are considered to be institutional barriers impeding engagement with KT. Please indicate, in your opinion, how much of an impediment these aspects are at Middlesex University at institutional level by grading each statement on a scale of 1-5: 1 being no impediment and 5 being a very great impediment (based on work by Francis-Smythye, J., and Lockett, N. et al.):

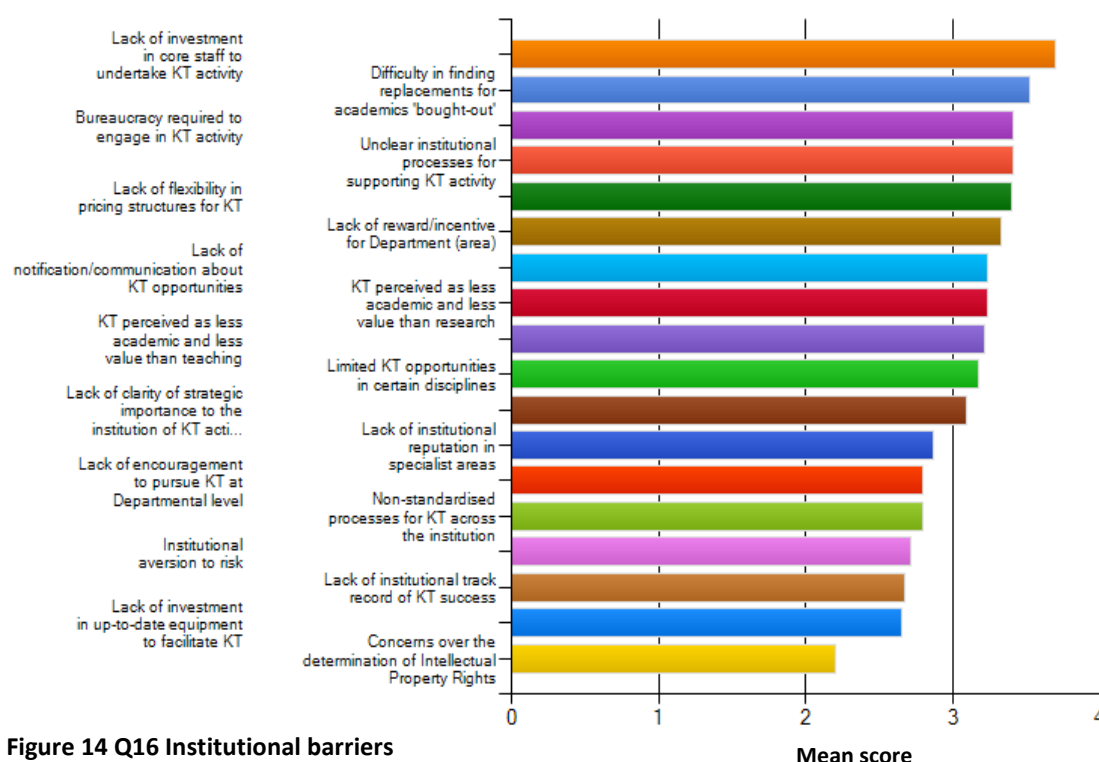


Figure 14 Q16 Institutional barriers

Free text comments were limited (4) which suggested there was a lack of clarification of KT, that 'teams' were needed to advance KT objectives, and one that suggested they, "had no business brain – find money boring". Francis-Smythye's (ibid) survey of academics involved in KT activity suggested the top four barriers at the institutional level were:

1. lack of reward/incentive for the Department (3.63)
2. lack of investment in core KT staff (3.58)
3. bureaucracy required to engage in KT activities (3.53)
4. difficulty in finding academics 'bought-out' for KT work (3.4).

There were striking similarities, but a key difference was the role of departmental incentives. In my survey, at sixth, this appeared less important with a mean score of 3.33.

At the individual level, the top five barriers from my survey and their mean scores were:

1. lack of time to engage in KT (4.24)
2. academics' time to engage in KT is too fragmented (4.0)
3. preference for teaching and research activity before KT (3.5)
4. mismatch of academic and commercial timescales (3.43)
5. lack of individual reward (3.39).

Figure 15 provides a summary of the complete set of responses:

According to previous research, the following aspects are considered to be institutional barriers impeding engagement with KT. Please indicate, in your opinion, how much of an impediment these aspects are at Middlesex University at institutional level by grading each statement on a scale of 1-5: 1 being no impediment and 5 being a very great impediment (based on work by Francis-Smythe, J., and Lockett, N. et al.):

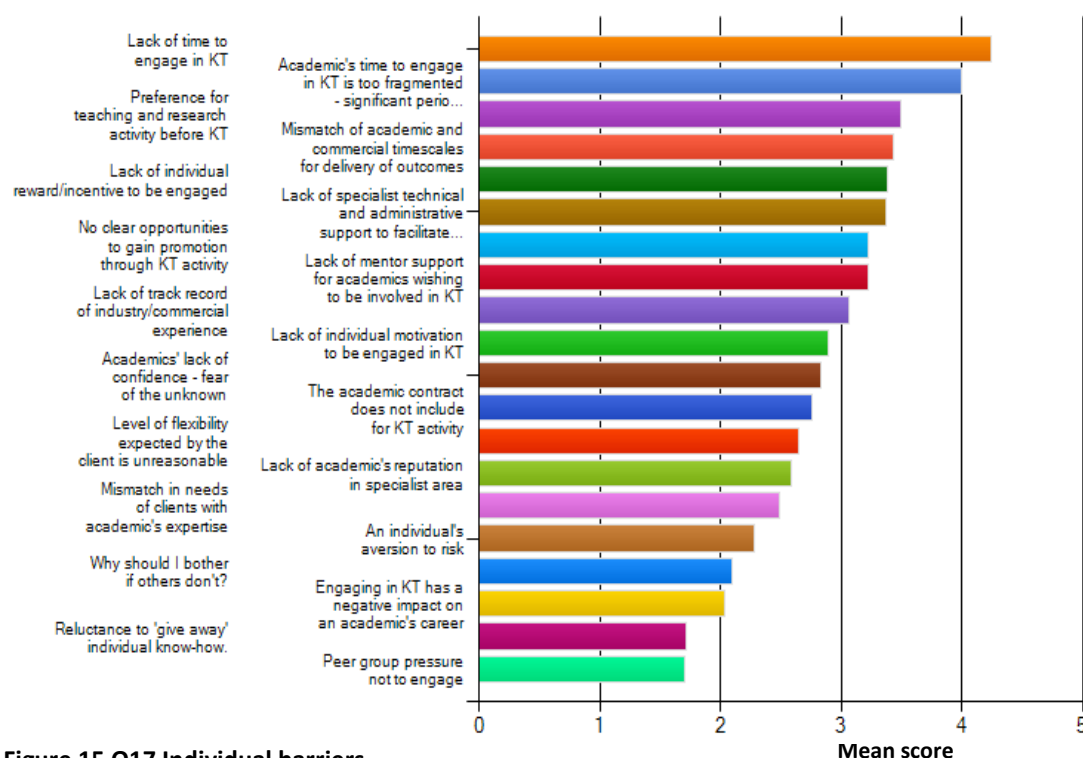


Figure 15 Q17 Individual barriers

Free text comments were limited (3), and included: challenges in social sciences being KT active, that teams were needed and that staff investment was critical.

Francis-Smythe's (ibid) research recorded the top four individual barriers as:

1. academics' time available to pursue KT is too fragmented (4.05)
2. lack of academics' time to engage in KT (3.9)
3. lack of reward/incentive for academics (3.83)
4. mismatch of academic and commercial timescales (3.78).

There was a significant similarity between the results of these surveys, providing some level of verification of my approach. In my survey the range of mean scores per statement for 'Institutional barriers' was 2.2–3.7, whereas for 'Individual barriers' it was 1.7–4.24. The greater variation in the mean significance of individual barriers may well show that participants were able to differentiate their importance more readily. Of particular note at individual level was the issue of time, whether this was in overall terms or the blocks of time assigned to KT. The 'mismatch of academic and commercial timescales' was because

academics undertook several different role requirements at the same time and were not necessarily project-focused, unlike many in the commercial sector. There may also have been significant cultural differences behind this mismatch. Lockett et al. (ibid, p.667) found similar results, postulating that researchers were perhaps involved in projects that “will continue over a period of years, while companies may want immediate results”. Furthermore, small businesses survive by finding immediate solutions to their pressing problems from necessity, and within businesses the impression is that academics work to a different timetable, probably influenced by the academic year.

2.4.10 Interventions to enhance academic engagement in KT

Q18 of the survey provided possible interventions based on personal experience and previous research. Participants were asked to grade each intervention on a scale of being ‘no help’ to ‘very helpful’. There was also the opportunity for participants to add proposed interventions see Figure 16).

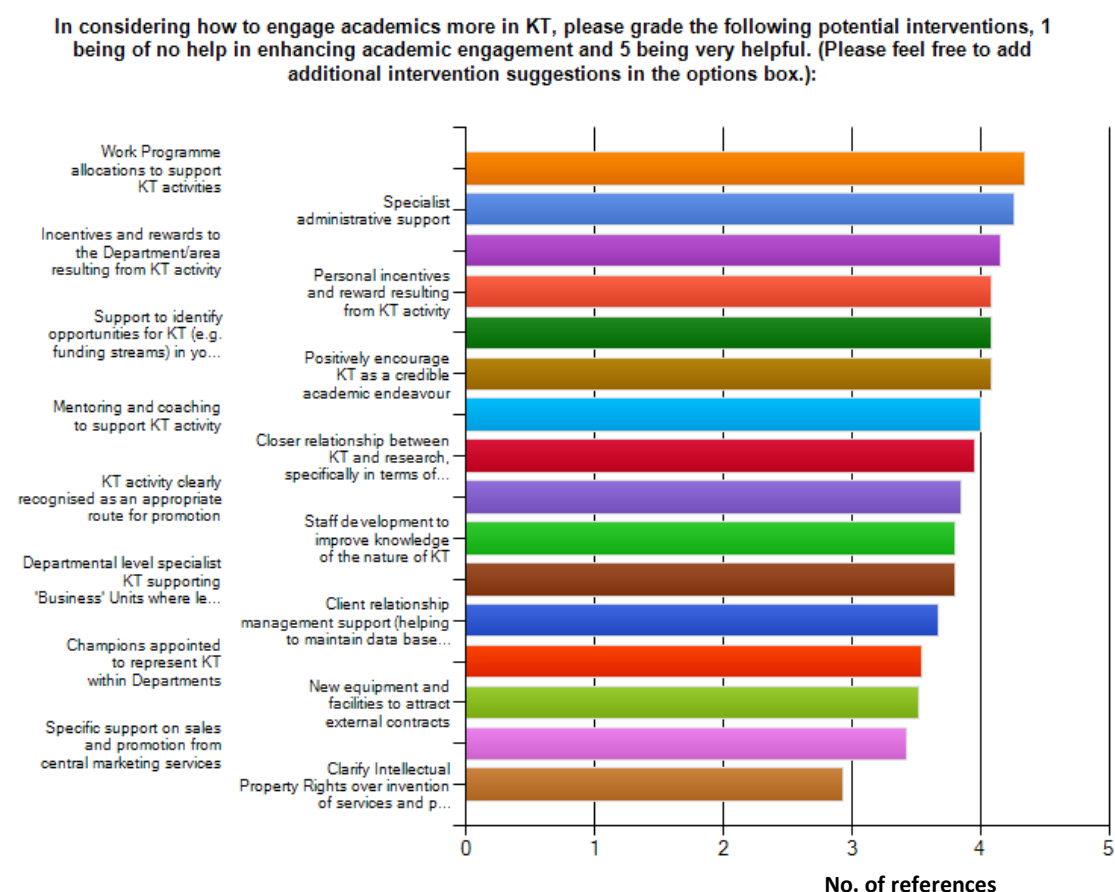


Figure 16 Q18 Interventions to enhance KT engagement

The top six incentives and their mean scores were:

1. Work Programme allocations to support KT activities (4.35)
2. specialist administrative support (4.26)
3. incentives and rewards to the Department/area resulting from KT activity (4.15)
4. personal incentives and reward resulting from KT activity (4.09)
5. support to identify opportunities for KT (4.09)
6. positive encouragement of KT as a credible academic endeavour (4.09).

The spread of means was 4.35–2.93 and, if one removed the 'Clarify IPR over inventions of services and products', this range narrowed to 4.35–3.43. This appeared to indicate a lack of strong feelings on the range of interventions, an agreement that many could be appropriate, or lack of knowledge about some.

Since the responses to both institutional and individual barriers featured aspects of the time taken to engage in KT, it was understandable that Work Programme allowances and additional administrative support were viewed as the key interventions. Incentives and rewards were also a significant positive intervention, as noted in the literature review of Appendix 1. The significance of personal incentives contradicted the response to Q8 (motives for being engaged in KT activity), where personal reward was seen as the least motivating aspect. However, the great numbers of responses from experienced academics in their fifties or older may have given rise to references to past situations when personal payments were more common in many parts of the institution, or simply that some viewed additional, non-salaried income as an appropriate reward for sourcing new institutional income through their extensive networks of contacts and their reputation.

The intervention to 'Provide support to identify opportunities for KT' was interesting, in view of the poor knowledge exhibited by participants regarding the role of the RKTO, as they provided information on possible funding opportunities.

The intervention originally proposed as a possible AR Cycle through my personal target setting in the initial stages of this study, departmental specialist business units, fell in the mid to lower range of responses with a mean of 3.8.

The spread of mean values was minimal for such interventions, so I determined that there was similar justification for a number of these initiatives.

2.4.11 Representativeness of Cycle 1 Survey compared with School in terms of staff descriptors

In order to make judgements on the representativeness of the Cycle 1 Survey for the School, a comparison was attempted of the participants' descriptors (age, sex, length of service, ethnic grouping and role) with the total academic population of the School. This resulted in a lengthy and complex analysis of data relating to the total number of academics employed, difficult since data were neither available electronically nor in the same format as the Cycle 1 survey categories. In addition, data were only available for the previous School of Health and Social Sciences (HSSc), prior to February 2012. Since that time there have been significant staff changes, not least science-based subjects leaving H&E and Education joining.

In order to evaluate whether there was any significant relationship between the Cycle 1 Survey results and the total HSSc academic population, Chi-Square and related p- tests were run using Minitab 15 software. In comparing the Cycle 1 Survey with the School data, the null hypothesis was that there is no difference between the relative frequencies for various descriptors and characteristics of staff; that is, there was a commonality and they were similar. The Chi-Square test assisted in assessing the probability of that null hypothesis being true. A related p value of < 0.05 would, therefore, have suggested a rejection of the null hypothesis, whereas a p value of >0.05 would suggest acceptance of the null hypothesis (rather, failure to reject it) and that the relative frequency of distribution of the staff descriptors/characteristics of the Cycle 1 Survey, may indicate more similarity between it and characteristics of HSSc.

From Appendix 8, the analysis was:

Academic role	Chi Square = 16.322	p=0.006 DF=5
Length of service	Chi Square = 65.935	p=0.000 DF=4
Age group	Chi Square = 9.813	p=0.020 DF=3
Sex	Chi Square = 0.328	p=0.567 DF=1

This would suggest that the Cycle 1 Survey was not representative of the School academic staff (HSSc, as at February 2011) in terms of length of employment, academic role or age. There was a statistically significant relationship with sex. This suggested that, although the sample size was numerically acceptable, the results of the Cycle 1 Survey were not particularly reflective of the academics in the previous HSSc and should be considered as having other defining factors, such as an interest in the area of KT. The results would suggest more senior staff responded, which correlates with the age profile. However, the significant change in populations between

H&E and HSSc suggests that any comparison may be of limited validity, while the difference between the two does not suggest any major discrepancy.

2.4.12 Summary of key findings

To draw together some key issues:

- the predominant responses were from more senior academic staff with extensive academic experience
- the participants appeared to have a reasonable level of understanding of KT
- views were mixed on the relevance of KT
- CPD, training and consultation were the main areas of KT activity
- unexpectedly, research outcomes were the main motivators for engagement in KT
- a number of participants were not aware of the University's RKTO
- key institutional barriers included unclear institutional support, lack of recognition of time to engage and levels of bureaucracy
- key individual barriers included the time to engage, the priority of teaching and research before KT, and lack of rewards
- suggested interventions included time allowances, administrative support, incentives and rewards (individual and department) and support for KT institutionally.

Learning in Action – Evaluation

This section reflects my views of the usefulness and appropriateness of the survey questionnaire and considers the attempt to compare the sample with School-level data on personal characteristics.

Experiencing

The close comparison of my results with those from surveys undertaken by others in the field was gratifying. They provided suitable direction for my future research aims and Cycles.

Although it proved challenging, my use of Minitab to derive statistics was both useful for the research and for personal development. I was grateful for the support of a more experienced colleague in using the software.

The survey results highlighted certain contradictions. In particular, it appeared that academics were motivated to undertake KT for broader academic benefit (e.g. furthering their research objectives) yet, when pressed about individual reward, there was an equally strong expectation. I postulated that some academics desire personal gain from KT involvement whilst others may not.

Understanding

I gained an understanding of the application of simple relationship statistics, based on the assumption of a normal distribution theoretical position.

My evaluation contributed further learning on the design and application of a survey questionnaire. I came to realise that designing questions that are relevant and unbiased is a skill that can be developed and honed.

My comparisons of the personal characteristics of participants with the total number of academics within the School (of the then HSSc) suggested limitations in correlations between the two groups. However, I found it challenging to obtain equivalent information to the Cycle 1 survey for School-level attributes where information was not available.

Certain responses, for example on interventions that might be most appropriate, highlighted for me an issue with undertaking such surveys at a distance in that data are rather 'flat' – one cannot engage further to understand why such opinions have been expressed. The results posed as many questions as they answered.

Judging

Whilst the SM approach did bring advantages of ease of access through email contact with all H&E academics and ease of use for participants, I found that the pre-determined structure led to a restrictive design. Likert-style scales allowed some flexibility, but participants had to use the options provided. This may have limited the emergence of data, unforeseen by the researcher.

The lack of consistency (or rather, a broad range of views) on interventions to enhance engagement suggested that a number of interventions had a relatively similar importance/ranking. The close comparisons with previous research increased my confidence and provided for a choice of options for further Cycles.

Acting

The results of my online survey provided the basis for further research during the next Cycle and established useful guidance for the development of future research.

The comparison of my survey of participant characteristics with whole-School data showed little correlation and may have indicated a bias towards certain groups (for example, as found in Abreu et al. in terms of participation by those active in KT). However, the HSSc data were no longer relevant because they predated the 2012 restructuring and had questionable validity.

The broad range of priority areas that I had identified for possible interventions enabled significant flexibility in designing the next Cycle.

T2: TRANSITION PHASE 2 – CYCLE 1 TO CYCLE 2

Progression from Cycle 1 Survey to formulating a rewards and incentives scheme

The Cycle 1 survey provided an opportunity to compare findings against extant research and to identify future AR Cycles. The survey engaged colleagues in the process of determining these future Cycles. The spread of mean values from the questions on impediments and barriers to the engagement of academics in KT of the online survey resulted in a number of possible intervention choices.

The Witty report (BIS, 2013) recommended that universities consider arranging incentives for academic groups working successfully with the commercial sector. This is a theme that recurs within the literature with debate as to whether or not this stimulates engagement in KT or not. Lockett et al. (2008), Francis-Smythe (2008), Hughes and Kitson (2012), Wang and Lu (2007) all found evidence that incentives, either at institutional or individual level, may facilitate greater engagement of academics in KT. The issue of rewards and incentives emerged from my own research in terms of individual barriers to engagement in KT.

This issue of rewards and incentives to encourage engagement with KT appeared to be an intervention of potential value to my organisation and also to the wider KT community. I found little evidence in the literature of the implementation of a rewards and incentives scheme across the broad range of KT activities. This provided the foundation for the next Cycle, to be focused on the development of a Rewards and Incentives Scheme (R&IS).

Following on from the 'fixed' questionnaire approach used in the Cycle 1 survey, in this next phase of the research other methods of inquiry would be explored to allow the engagement of academics within H&E in the development of a R&IS. I wished to engage academic colleagues as participants using methods of research inquiry suitable for the research aims and that would also allow for co-production of resultant actions and the development of my personal research practice.

3.0 Cycle 2: Introduction of a Rewards and Incentives Scheme

This chapter describes how I built on relevant literature, as seen in Appendix 9 and, through participative individual interviews, created a Rewards and Incentives Scheme (R&IS) for H&E. The timeframe for this Cycle is shown in Figure 17:

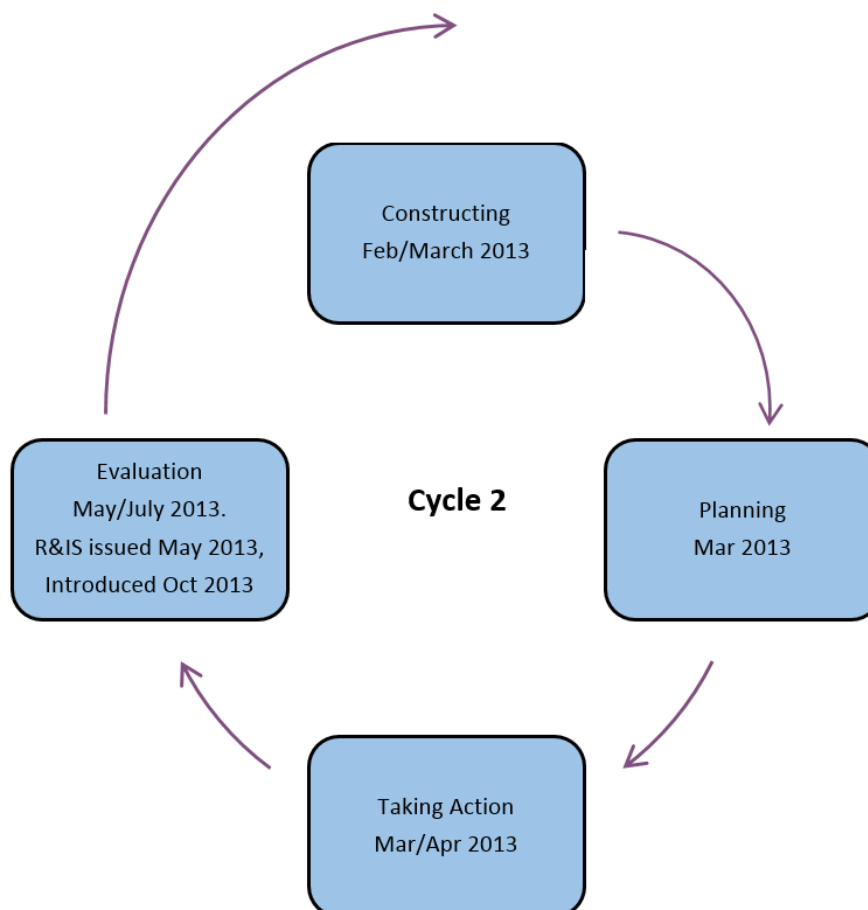


Figure 16 Timeframe and stages for Cycle 2

3.1 Constructing

This section used a literature review, in Appendix 9, to form the basis of my planning of Cycle 2. Sections 3.2.1 and 3.2.2 provide a summarised context whilst other sections consider the current situation at MU.

3.1.1 Context of rewards/incentives and theoretical conceptions

- Reward management recognises the contribution employees make in meeting organisational objectives (Armstrong, 2012)
- Rewards need to be attuned to the overall business strategy (Lawler, 1990) and aligned to the culture of the organisation (Bushman et al., 2011)
- Rewards are made in the context of the internal culture within an organisation and the external 'business' environment (Armstrong, *ibid*)
- There are a number of theoretical positions taken in consideration of rewards: economist; industrial relations; occupational psychologist; political; sociological; and strategic HRM (Perkins and White, 2009)
- Rewards may be in the form of enhanced employment rights or benefits across all employees or, at an individual level, on a performance basis (Katz and Kahn, 1976). The nature of rewards may take a variety of forms and practices (Perkins and White, *ibid*). Initial reliance on pecuniary rewards (Cox et al., 2010) has now been replaced by a broader overview of alternatives (Shields, 2007; Armstrong and Brown, 2006)
- As there are challenges in devising rewards schemes (CIPD, 2009; Cox et al., *ibid*; Shields, 2007; Armstrong, *ibid*), more focus has been given to the role of 'Total Rewards' where organisations seek to achieve a balance between 'transactional' and 'relational' categories. (Towers- Perrin, in Armstrong and Brown, *ibid*)
- Rewards and incentives can form part of an appraisal approach that recognises an employee's overall contribution to the organisation across a range of factors, beyond task completion.

3.1.2 Rewards and incentives within the HE sector for KT

- The lack of suitable reward schemes has been identified as a key barrier to academics' engagement in KT (Francis-Smythe, 2008; Abreu et al., 2009; Lockett et al., 2008; Jacobson et al., 2004)
- To engage academics more in KT, incentives might be part of an overall approach (Chatterton and Goddard, 2000; Friedman and Silberman, 2003). Some believe a lack of such incentives actively disincentivises academics to engage in KT (Todorovic et al., 2011)
- In the USA, largely econometric research has demonstrated a relationship between various types of reward to faculty members and enhanced KT/entrepreneurial activity (Siegel et al. 2003; Link and Siegel, 2005; Siegel et al., 2007a, b). This was specifically the case when royalty distribution from KT to academics was enhanced (Lach and

Shankerman, 2008; Siegel and Phan, 2005). Similar conclusions have been reached in Europe (Debackere and Veugelers, 2005) and in East Asia (Lai, 2011)

- This view is not supported across the sector. In Australia, Stilwell (2003) suggested that incentives were part of the commercialisation of HE and that such economic rationalist models are not appropriate. Lucas (2006) found that incentives do not correlate well with KT engagement *within* an organisation and that cultural aspects were more important. Osterloh and Frey (2000) suggested that more implicit motivators lead to enhanced internal KT
- Rewards and incentives can be beneficial across an organisation and not just for the academics undertaking the core activity (Markman et al., 2004).

3.1.3 Rewards and Incentives at MU

MU does not operate on the basis of a business profit motive, where financial reward structures link to turnover or margins. Todorovic et al. (2011) recognised that there were clear differences in stimulating entrepreneurial activity within public universities compared with the private sector. Todorovic et al. (ibid) and Friedman and Silberman (2003) suggested that an incentive for academics to engage in KT was a corporate direction to do so, supported through appropriate enabling mechanisms. MU operates within a competitive market and the continued commercialisation of the HE sector has led to a changing landscape. MU has a long history of developing a variety of explicit and implicit employment practices that aim to attract and retain high-performing staff. Recruitment processes regularly promote benefits such as pension rights, maternity/paternity leave, annual leave entitlement, etc. A comprehensive staff development programme, free to staff when supported by line managers, is an attractor (Middlesex University, 2014b). Academics at MU can seek promotion to the next grade on the basis of transparent criteria, and a selection and interviewing process. The HERA scale introduction has led to contribution points to allow for exceptional performance to be recognised on an annual basis as a one-off payment. The Dean can also agree to honoraria, again one-off payments to recognise significant contributions above the Work Programme.

A cross-over between intrinsic and extrinsic dimensions is the annual appraisal process. This process focuses on development needs and only implicitly on how those needs may align with corporate objectives. However, it does use one of the most significant intrinsic rewards of recognition as part of the appraiser's positive feedback on performance. An executive-level appraisal scheme has been introduced for senior managers based on performance against set leadership competencies and annual objectives. These appraisals are reported to an Executive-

chaired annual Senior Manager Remuneration Panel able to agree increased salary points or bonuses based on high performance. MU also promotes welfare policies and practices to encourage higher satisfaction levels. Led by what appear to be Occupational Health and Safety drivers, work is being undertaken in the area of work–life balance. However, the University has no academic ‘Total Reward’ strategy.

3.1.4 Rewards as a result of IP exploitation

MU (Middlesex University, HRPS 25, 2014c) also recognises that academic staff have rights to benefit from IPR that might be generated through, or exploited by, commercial activities:

“Middlesex University recognises the importance of careful exploitation of its IP both in terms of fulfilling its obligations to the UK’s knowledge economy and to generating a financial return from the intellectual capital it supports.”

Further, the University explicitly acknowledges its desire for staff to benefit directly through exercise of such IP:

“Middlesex University also wants to enable its staff to receive a substantial share of the benefits of commercial exploitation of the IP *Rights* it retains. It recognises that the successful handling of IP can influence significantly both staff recruitment and morale.”
(ibid)

This is similar to the royalty share approach promoted by Link and Siegel (ibid), and Lach and Shankerman (ibid) as KT ‘stimulators’, although it should be noted that ‘royalties’ occur as a share of new sales revenue in the market rather than a share of the licence agreement through an exploitation agent/company. Custom and practice has been that the revenue options primarily apply when there is exploitation potential of IP arising from some form of invention that can then be the subject of commercialisation either in partnership with a business, licensed to another party or subject to the creation of a business entity (often called ‘spin-offs’ in HE). There are many Universities that have commercialised in this way (e.g. UCL and Kings College). Such entities are rare at MU given that it has, in the past, not had the same research profile as other HEIs the major KT activity being professional training & education (CPD), consultancy, training, conferencing and contract research. In addition, the HRPS 25 ‘share’ arrangements are simply not attractive to academics.

An additional incentive for Schools at MU is that a significant share of Indirect Costs (IDCs) applied to KT contracts are returned in order to encourage further KT activity. The ‘centre’

retains an amount to help support the RKTO costs and base budgets. The level of IDC is largely up to schools to judge based on costs and market conditions. This has proved to be highly significant for H&E with annual returns of around £800,000 per annum.

3.1.5 Cycle 2 research aims

From construction, the research aims (and consequent 'action') for Cycle 2 were refined to:

The development and introduction of a R&IS as a Cycle 2 'action' that would engage and motivate academics within H&E to become involved, or enhance their involvement, in KT.

Further sub-aims included consideration of:

- design an appropriate R&IS to maximise future engagement in KT
- introduce a R&IS so as to impact on engagement/performance, including for the consideration of individual incentives
- investigate other factors possible influencing engagement with an R&IS (e.g. age, academic role, sex, ethnicity, salary scale, 'social acceptability', values, motivations, positioning, historical perspectives)
- identify any impact of the introduction of a R&IS on teaching & learning and research activities/priorities
- consider ethical, financial, organisational structural and societal issues

Learning in Action – Construction

This section reflects on the development of knowledge about rewards and incentives interventions, particularly as they might pertain to the KT agenda.

Experiencing

My contextual literature review on R&I and reflection on the transition phase from Cycle 1 provided a framework to devise the research aims within the construction stage of Cycle 2. My investigations of the literature focused on the use of R&I approaches, resulting in a more informed personal knowledge base. Despite references to the importance of R&I to enhancing KT in UK-based literature, limited research appeared to have been undertaken in the implementation or evaluation of an R&IS. In a personal communication J. Francis-Smythe confirmed that she was not aware of such research in the UK at that time.

Understanding

The limited UK literature on KT related R&I led me to sources from overseas (Canada, USA, Australia). These were largely focused on the issue of R&I from royalty or licence share perspectives. I found that the predominant view of KT leading to specific ‘exploitable’ IP through patenting was evident but that this was not relevant to many UK based universities. From my experience at MU, KT was seen to encompass both patentable inventions/IP, but also a much broader range of community and business oriented activities (CPD, consultancy, relationship building, contract research etc.).

The literature provided me with some key points of reference:

- * in many settings (and countries) KT had struggled to be recognised as an academic endeavour
- * the lack of recognition (financial, promotion, tenure etc.) for KT compared to other academic activities (teaching, research):
- * that R&I *should* enhance performance in KT and that it *did* specifically for sharing licence royalties
- * others disagreed to an overly commercial viewpoint for HE and suggested KT could be better enhanced primarily through changes to organisational culture and behaviour patterns

- * there were significant polarised views on whether rewards of a financial nature were motivational. I found some argued that a more psycho-social approach to the motivation of staff to undertake KT was needed, rather than an econometric approach that focused on pay-related objectives

Judging

Despite conflicting views, I posited that R&I could lead to enhanced academic engagement in KT but the focus might need to include for financial and non-financial rewards (intrinsic and extrinsic). My thoughts were that the challenge would be to design a R&IS that encompassed intrinsic and extrinsic awards and that any action related method of inquiry needed to be able to address this. In addition, I found that in this literature review process there was a need for me to continuously reflect on the relevance of the research aims so that they remained relevant for the data gathering phase.

Acting

My key action was to ensure the research methods of inquiry planned to be used would be suitable to engage participants in devising a R&IS that would encourage enhanced KT activity. My research would need to be designed so as to, enhance engagement in KT, be reflective of the learnings from literature and my own tacit knowledge, and supportive of the R&IS implementation.

3.2 Planning

This section considers relevant methods of inquiry and approaches to interpretation. It should be read in conjuncture with Appendix 10 which considers literature which influenced thinking in relation to these aspects.

The unit and the level of analysis are challenging to specify in this AR context. To some extent the unit is the individual academic, but their academic Departments, mostly reflecting disciplines, are critical as their performance is monitored against School targets and can clearly be identified as an entity. Individuals are increasingly being set KT targets/expectations and both the literature and the survey undertaken in H&E has demonstrated the importance of individual and departmental incentives and rewards. Further, the inductive nature of the research will impact on levels of analysis.

The espoused philosophy of some AR authors would differ from 'traditionalists' in terms of the 'unit of analysis'. The focus of the research outcomes could be argued to be the practitioner-

researcher and they could be, themselves, the unit of analysis. The level of self-reflection is heightened in AR. According to McNiff and Whitehead (2011, p.31):

“the object of inquiry (some people call it the unit of inquiry) refers to the focus of the research. In self-study AR, the focus of the research is you. You study yourself, not other people. The questions you ask are of the kind,” what am I doing? How do I improve it?” Not of the kind,” what are they doing? How do they improve it?” You aim to show how you hold yourself accountable for what you do.”

The Cycle 1 Survey findings directly influenced the design of the intervention methods of this Cycle. Following on from the largely quantitative Cycle 1 questionnaire, there was a need to undertake a more in-depth investigation into why participants placed Rewards and Incentives (R&I) as a priority intervention. The research imperative would indicate the need to understand views, opinions, attitudes and perspectives of participants, predominantly the focus of qualitative research. AR can encompass qualitative, quantitative and mixed methods approaches. Of critical importance is to determine which research approach was most appropriate in providing data to address the research aims. Whilst the literature and the Cycle 1 Survey have highlighted the issue of R&I as an intervention to enhance engagement with KT, there is limited further research into the nuances of this. The research was, therefore, exploratory and inductive in terms of deriving theoretical perspectives from an interpretation of the data that emerged.

A popular and relevant research approach in these circumstances would be to interview a sample of School academic staff to be able to generate a rich and detailed database for interpretation. Interviews offered an appropriate and logical approach to the research given that there was a need to examine views and attitudes but, importantly, to allow colleagues space to do so in a confidential environment given potential sensitivities involved. However, I was aware of criticism by authors such as Silverman (comments to a seminar at Middlesex University in October 2012), Bryman (2012) and Askey and Knight (1999) that qualitative researchers all too often revert to interviews with little thought for other approaches. It is recognised that there is a modern phenomenon of undertaking data collection in qualitative research through interviews – it would appear to be the natural choice in many cases without a real focus on why that approach has been chosen. For the perspectives of this study, following on from the Cycle1 Survey responses, there was a need to explore the reasons why academics had responded in the way they had and to understand more fully the underlying factors. There was certainly the potential to gain understandings from published research (text

based sources) but there was little recent UK based literature on the actual implementation of rewards and incentives in a KT context, rather a recommendation that such research needed to be undertaken. There were also some internal School documents from previous considerations of incentives packages but analysis of these would not provide the depth of understanding for attitudes, beliefs and desires that interviews could. Case studies could also have been a useful approach but these would not have achieved the desired detailed evaluation of personal views as required and would require a broad number of cases to provide a representative sample of views and activities. Ethnographic (observation) techniques could have been applied in certain contexts, for instance at meetings where it would be possible to ascertain attitudes, values, understandings etc. The ethnographic researcher might also have been subsumed within a particular research discipline area for some time to witness first hand colleagues' attitudes to the use of rewards and incentives. But that brought with it ethical issues about the overt or covert nature of such research. In addition, the time needed to undertake such research would be impractical as would the issue that the Deputy Dean could hardly melt into the team unnoticed!

Askey and Knight (ibid, p.18) suggested that interviews following questionnaires are a good way of "exploring what lays behind" survey responses. As Flick (2009) suggested, the research inquiry method used should suit participants and, in H&E, current research was dominated by qualitative approaches, most academics familiar with using interview techniques.

The methodological approach adopted is reminiscent of a 'progressive focusing' where different research approaches can be used to narrow down to priority areas of interest (Askey and Knight, ibid, p.18):

"a questionnaire might be used to get an indication of attitudes, reasoning or behaviour in the target group at large and then interviews might be used to explore what lay behind the findings of the questionnaire."

Appropriate methods of inquiry are fundamental to any social science research (Askey and Knight, ibid). In this case, the approach to the research is viewed to be logical, relevant to the needs of the research question, the skills of the researcher, the resources available and the nature of the participants (as suggested by Robson, 2011; Flick, ibid). Appendix 10 provides an overview of the key literature sources that determined the development of the approach to inquiry adopted in Cycle 2. This included consideration of:

- the advantages and disadvantages of interviews
- whether interviews can be viewed as a 'neutral' method
- assessment of the 'interview' as the most appropriate approach
- the appropriateness of a semi-structured interview
- interview techniques
- sampling for interviews
- specific ethical/'rights' issues for interviews

This resulted in a semi-structured interview approach with an interview guide that reflected the research questions for Cycle 2, the literature and personal experience. Appendix 11 provides a brief background literature review of the key issues that were considered in the development of an approach in preparation for the interpretation of the data. In summary, this involved the thematic analysis of the transcripts from interviews using NVivo, seeking to identify sub-actions towards the development of the R&IS as the prime action. NVivo 10 is typical of software packages designed for analysing data and deriving meaning. Data, e.g. transcripts of interviews, are coded and then software allows for those codes to be managed to form categories or themes. NVivo does not undertake the interpretation but provides a platform to support identification of categories and themes. NVivo supports the complex process of coding and subsequent interpretations and can save considerable time and provide results in an attractive format, it is also not without its critics (according to Bryman, *ibid*) who have suggested:

- there is a tendency to revert to quantitative approaches as the researcher is almost encouraged to create a numerical analysis of the data
- that the algorithms within software like NVivo are largely based on what research analysis paradigm is utilised, mostly derivations of Grounded Theory and that may not be appropriate for all research questions
- the researcher is deflected from their prime concern by focusing on use of software
- contextual aspects of the text may be lost through the process fragmentation of data
- it becomes a rather mechanical process and loses a sense of humanity

However, the use of NVivo carried significant advantages in terms of supporting the process of interpretation and the manner in which relationships between categories (or nodes within NVivo) could be both understood and demonstrated. Within H&E, NVivo is commonly used as a tool to support qualitative research and is appropriate for the analysis of interview transcripts. Whilst supporting a structured approach to facilitating emergence of key themes from data, it allowed for an inductive/iterative process so theories and concepts could emerge.

Learning in Action – Planning (Interview set-up)

This section reflects on my developing understanding of the interview as an appropriate qualitative research approach, and also on issues of deeper learning in terms of practical and epistemological thinking.

Experiencing

In addition to my own self-development in understanding the use of different methods of inquiry, the debate on the appropriateness of interviews led me to question this intended approach to Cycle 2. In particular, the acceptance that the interviewer cannot be 'neutral', that he/she is part of creating a new reality, and the accusations that this leads to bias, etc, was difficult for me to accept, coming from a scientific background. I initially found the lack of ability to generalise from the results to be of concern although, as Bryman (2012) noted, the generalisation of AR is to theory rather than the general population. I was also of the opinion that my results might provide meaning and be useful for other researchers/practitioners. As part of the decision-making process towards interviews, I gave consideration to different approaches, from ethnography to quantitative content analysis of documents. There was something of a personal revelation in developing knowledge of grounded theory. I found the prospect of using elements of this approach disconcerting, yet liberating. To develop theory and meaning inductively in the research process was a challenge for me, as a scientist.

I found that the development of knowledge in different interview approaches (structured, semi-structured and open) and the purposive sampling arrangements was critical, as was the development of the approach to recording interviews. A major part of this period for me was to experience the use of NVivo software for interpreting qualitative research data. I attended a two-day course on its use and techniques for interrogation of data.

Understanding

The development of knowledge and the process of planning for selecting the appropriate method of inquiry for Cycle 2 assisted me to a better understanding of the positive and negative aspects of using various techniques, including interviews. The planning process also enabled me to establish the most effective personal time management arrangements. I developed my technical knowledge of the use of digital recording equipment and data software analysis techniques, but the greatest understanding for me at this stage came from learning about qualitative inquiry and analysis methods, and how these could be adapted and applied to the research within a constructivist paradigm.

Judging

The key decision for me was to determine which method of inquiry to use and its application. I determined that personal interviews were the most appropriate approach to investigate the meanings, understandings and attitudes or positions behind the results of the Cycle 1 Survey. I concluded that a constructivist approach would result in meaning and theory developing in an inductive fashion from the research, engaging participants as creators of knowledge and understanding.

I chose to use semi-structured interviews to gather data within a purposive sampling arrangement and I attempted to gain some form of stratification through selecting participants from various academic levels. My sampling was also opportunistic and convenience, given that participants were volunteers. I investigated using voice recognition software to transcribe digital recordings. Following discussions with Assoc. Prof. J. L Matheson in the USA, a specialist in the use of voice transcription techniques (Matheson, 2007), I determined that this was too complicated to implement and decided to hire an external transcriber. I would manage the process to ensure that an accurate transcription of the interviews without introducing further bias. I devised a separate demographic questionnaire for participants to complete at the time of the interview with the intention of contrasting across the sample. In order to make sense of the data, following consideration of appropriate research methodology literature, and advice of qualitative researchers within MU, I decided to use NVivo 10 as the tool for interpretation.

Acting

The learning I gained led to my choice of an appropriate investigative technique and the development and implementation of interviews as the approach for part of Cycle 2. My actions then focused on designing the semi-structured question sheet, a consent sheet, a demographic questionnaire and the purchase of appropriate digital recording equipment. I found the NVivo training course to be well-organised and presented, but there was simply too much information to be covered in two days. My experience was that the course did not really make sense until I was interpreting my data. Whilst doing the course, my concerns also started to grow as to whether the analysis tool was, to some extent, leading the research outcomes and forcing a more quantitative paradigm on qualitative research. I made arrangements with a transcriber, an ex-Masters student from Forensic Psychology, who was highly recommended. I provided a written agreement on how the transcription should be presented and in what form it would be delivered.

3.3 Taking action

This section describes the interviewing and the generation of research data for Cycle 2.

Eleven interviews were undertaken with volunteers from the Cycle 1 Survey between 12th March and 9th April 2013, each lasting 30–40 minutes. Semi-structured interviews were used following a question guide (see Appendix 12). All but one interview were undertaken in my office at Hendon Campus to allow for confidentiality and comfort. The exception took place in a dean's office at another campus. Each interview was digitally recorded by two devices (in case of malfunction), an Olympus DS-2500 and a Sony ICD-UX523 with sufficient memory for all interviews. Interviews were saved as separate files with unique reference codes and were date stamped. Only the Sony recorder was needed for further analysis, with the facility to download directly via USB and supplied software. Saved to the desktop in a zipped document, the data were downloaded through a password-protected process to a Dropbox account to which only the transcriber and I had access. Transcripts were saved as Word documents for analysis, shared through the Dropbox.

The invitation to interview and consent form, setting out the background to the study, are shown Appendix 13. Only one participant signed the form in advance so these were re-supplied at the interviews, and were retained for reference. In addition, each participant was asked to complete a short personal profile at the end of the interview (Appendix 14).

As Askey and Knight (*ibid*, p.141) note, transcription is “one interpretation of an interview, and no more than one interpretation” and that “transcription is neither neutral nor value-free”. In this respect, transcription is no more than a textual interpretation of a moment in time. There are challenges in using an external transcriber. In not undertaking the process myself, there was potential for nuances in the recordings to be lost, since the transcriber was not immersed in the research. Although little technical language was used, there was the danger that some words may have been misunderstood. If I had undertaken the transcription myself I could also commence the analysis ‘in situ’. To counter this, the transcriber was briefed in person and a specification stipulated (Appendix 15). During transcription, words that were unclear were noted in the script for my attention. I listened to all recordings, following the transcripts. Errors were corrected and the transcripts prepared for further analysis. I noted the high level of accuracy between transcripts and recordings.

Learning in Action – Taking action (Interviewing)

This section offers my reflections on conducting interviews, including the process itself, the restrictions imposed by the semi-structured guide and additional views on generalisability.

Experiencing

Initially, I found the process of interviewing colleagues for a research project unusual and unsettling. I was concerned not to make administrative errors (e.g. in the recording process, note taking, etc.) or failing to cover the full range of topics within the time allowed. But the interviews ran smoothly and participants appeared to contribute freely without self-censorship. From various comments made at the end of interviews, participants did not seem concerned by my position as a senior manager. All but one interview felt relaxed and most involved some element of amusement. The exception was with a PL at our Archway campus. The large room and conducting the session over a meeting room table led to a formal and rather tense interview, illustrated by the parting comment, "Can I go now?" This was a surprise, as I had known the participant for many years. Despite my coaching experience and skills, I noted improvements in my own interviewing skills in using the semi-structured approach. My experience of coaching is of a far more open experience with little structure.

Understanding

In my opinion, the process of interviewing was positive, the atmosphere seeming collegiate and equal. Participants did share private thoughts and views. The interviews lasted no more than 45mins, many 30mins, suggesting I could extend the range of questions for any future repeat of these interviews. The interview that did not go smoothly was probably due to the choice of room and possibly participant nervousness in being interviewed by a senior colleague. I found that the semi-structured nature of the interview ensured consistency across interviews. However, this was also restrictive and at times I felt I was conducting a survey questionnaire rather than engaging in a conversation. Listening to the recordings, it was apparent that I sought to extend the range of questions through prompts, but there was evident conflict between consistency and more freedom. The interviews let me gain a greater understanding of the participants' attitudes and feelings as I could stimulate direct, relevant discourse. I believe that this experience supports claims that interviews allow for an enhanced depth and richness of data, but I was conscious of the need for caution in interpretation due to authenticity issues. Whilst I clearly had a controlling role as interviewer, the interviews became a discussion between colleagues as participants of AR, offering opinions in an open and positive fashion. This supports the views of Fontana and Fret (2008) in that the interview becomes its own participative drama and social encounter.

Judgement

I found the interviews provided a rich source of data to analyse. The environment within which interviews were conducted was shown to be critical. The use of semi-structured interviews did, in my opinion, restrict the free-flowing nature of the data obtained. The approach would have significant implications for the evaluation/interpretive phase. I needed to balance this against the benefits of a semi-structured approach in that it provided structure, ensured I retained a focus on key issues and addressed the aims. This could aid interpretation and, whilst generalisations could not be made, the results might assist in at least identifying issues of wider interest for the research community.

I found there to be both positive and negative aspects to being a senior manager and an insider-researcher. It allowed me to use a common language and terminology applied to a work context that participants understood. However, it also brought challenges to ensure that my relationships and status did not impact on the interview. I believe my approach, using extensive coaching experience, helped to create a positive environment, but the commitments to anonymity and confidentiality were critical. Another issue I identified that is indicative of the concerns of positivist researchers regarding qualitative methods of inquiry was that each interview was different in terms of the precise questions used; the semi-structure allowed commonality for the main research aims, but the prompts varied. Generalisations can therefore be problematic.

Acting

I identified a number of key action responses:

- * I should continue to give attention to the development of interpersonal relationships within an interview to encourage participants to engage fully
- * the importance of finding a physical location conducive to the interview process
- * a need to experiment more with less structured interview guides – more open approaches
- * even at this early stage there was clearly an identifiable need to communicate more effectively the nature of KT.

3.4 Evaluation

This section reports on the use of NVivo to interpret the data from interviews to progress with the main action, the production of the R&IS.

3.4.1 Themes emerging from the NVivo analysis

The NVivo auto-coding function used the question guide headings as the main nodes (categories). This led to 12 main nodes (including 'Memorable Quotes'), with an additional 41 daughter nodes representing sub-categories. Appendix 16 provides the full spreadsheet analysis. It records the number of nodes and sub-nodes, together with how many sources and references were coded for each node – one source may have provided several references per node. It shows how that coding was undertaken contemporaneously with the interviews, as recommended good practice. Many of the themes that emerged (e.g. personal values, personal culture, views on how an R&IS could work) overlapped considerably. Coding was continued up until saturation, that is, few new data were emerging.

Appendix 16 demonstrates the range and variability of coding. Some nodes (e.g. whether rewards should be allocated to individuals or groups) showed quite a broad range, with a total of 11 sources (s) with 21 references (r) spread across six daughter nodes with no single node coded with more than 6s. This latter source concerned positive views on rewarding groups and the lowest was a single source with a negative comment on rewarding individuals. Another example is the category (node) of 'Motivation', with 10s and 25r across nine daughter nodes, with the individual maximum being 7s ('Positive about motivational role of R&I').

The themes (main nodes) with the most source responses were:

- issue regarding award to individuals or groups –11s
- culture – 11s
- motivation – 10s
- experience in KT (knowledge base) – 11s
- impact on teaching or research of an R&IS – 11s: 5 as negative and 7 as positive impact
- key components of a R&IS - 11s

The number of sources recorded on 'Experience in KT' (daughter node) pointed to the potential risk of a self-selecting (purposive) sample for interviews, as most volunteer participants brought knowledge and experience of KT activity, some in their current role. Daughter node references within main nodes ranged from a single reference (e.g. negative

views in rewarding individuals) to 38 (comments on the organisation of any scheme). Reviews of the interview sources (transcripts) downloaded into NVivo showed that virtually all sections had been coded to at least one node. The broadness of the coding analysis is reflected in the two reports provided by NVivo in Appendices 17 and 18, 'Report Node Summary' and 'Coding Summary by Source'.

3.4.2 Further NVivo analysis and the use of memos for theme identification

The NVivo software allows for interrogation of data using various analysis tools or 'queries'. Most commonly used are: 'text query' (for common links between words or 'phrases'); 'word frequency' (simply the most used words); and 'node query' (commonalities across and between nodes). Running these queries did not provide additional useful information. Appendix 19 shows word frequency as a tag cloud – all the key words are those one would expect and perhaps relate to the questions asked as much as the responses. Appendix 20 shows a spreadsheet on the use of the word 'recognition' in interviews. Other words and phrases were used, but did not show any notable patterns, such as a text search for 'money' (capturing any text with 'money' as a root). Appendix 21 shows that this text appears predominantly in a few interviews, notably in interview 130319.001 with 35 references.

Whilst the categorisation of nodes into daughter nodes fragmented the data and led to a loss of contextual 'feeling', the process was helpful in interpretation and in formulating ideas for developing themes. Although the relatively few interviews does not support generalisation, as part of the process certain demographic data were collected (as in Cycle 1 Survey). This included: sex, length of academic service, academic role, ethnicity and age. A summary of the Classification Demographic data is provided within Appendix 22, 'NVivo Classification Demographics Summary'. Participants in the interviews can be classified as follows:

- 64% female
- no participants under 31 years old and 64% over 50 years old
- all 11 participants were at SL or above, perhaps more involved/interested in KT (Tartari et al., 2012) than younger staff, who may lack the confidence to be interviewed by me
- only one respondent was not ethnically 'white'
- despite repeatedly writing to HODs, I was unable to interview all five.

The query option allows NVivo to undertake a form of cross-tabulation of data sources (nodes) against these demographic descriptors. The limitations provided by the range of variances in the demographic data suggested that cross-tabulating by age and ethnicity was unlikely to

provide significant value and the higher numbers of senior staff would skew the data. The use of the NVivo query capabilities in identifying themes beyond those reflected within the question guide was limited, thus memos were used to enable me to identify commonalities within and across categories as the data was being analysed. A memo was commenced for each parent node and key sub-nodes, once saturation of coding had been reached. The issues and actions that emerged were then summarised (see section 3.4.3) and these then formed the foundations and content of the subsequent R&IS – the main ‘action’ of this AR Cycle. The list of memos created is in Appendix 23, ‘NVivo memos created from parent nodes’. An example of the content of a memo is found at Appendix 24 ‘NVivo Example of memo content Cultural-Individual Aspects’.

3.4.3 Summary of the key aspects to reflect within the School’s R&IS

The results of the interpretation of results from NVivo memo creation are provided in Appendix 25. Whilst recognising the limitations of the range of academic positions, interpretation was supported by attempting cross-tabulation of some nodes against demographic data as in:

- ‘Experience’ with ‘Academic Role’ as in the Appendix 26 graph. Whilst low numbers limited interpretation, it was interesting to note that senior staff such as HoDs, Professors and SLs declared experience in both KT and an R&I.
- Across all three ‘Culture’ daughter nodes it was noted that the SL participants provided more references in coding to ‘Personal Culture and Organisational’ nodes than other positions (Appendix 27). A significant issue in the interviews was that SL and HoDs appeared to have stronger views on cultural aspects of the value of KT within MU.
- In ‘Value and Beliefs by Academic Position’ (Appendix 28) more SL references were recorded to this issue, both in terms of ‘Personal Values’ and ‘Recognition’.
- For ‘Positive Motivation created by R&IS by Academic Position’, HoDs and SLs were most referenced (Appendix 29).
- ‘Work programme issues by Academic Role’ showed greater reference from SLs and HoDs, the former probably due to competing demands, the latter in terms of managing stretched resources (Appendix 30, ‘NVivo Work programmes by Academic Position’).
- ‘Key Components of a Successful R&IS’ with ‘Academic Position’ (Appendix 31), whilst including only a single PL, suggested:

- SLs appeared to have made the most references to rewards other than direct financial payments
- all positions appeared to have referred to the organisation of any scheme in approximately equal significance
- HoDs referred more than others to the use of financial rewards in any scheme – this may be due to their focus on the manner in which such a scheme might work within the dynamics of their Departments.

Rather than summarise the findings here, I have used the themes emerging from the analysis in Appendix 25 to draw out and identify key aspects that need to be reflected within the action for Cycle 2, the development of an R&IS.

Key foundation principles to address in the R&IS and/or its implementation

- Awareness and knowledge of the value/strategic importance of KT is highly variable and the R&IS needed to recognise this and for managers to use it so as to support engagement with KT.

“I can’t see any major negative outcomes I can see the argument which I think is a sterile one whether academia is supposed to be an academic institution it shouldn’t sort of um it shouldn’t dirty its hands with engaging too much in the marketplace or whatever but I think surely that argument has been put to bed years ago hasn’t it by now particularly here I mean this isn’t we’re not an Oxford or a Cambridge and even if we were they they’d be doing the same thing.” (130320.001)

“I think most people are not interested in it um and one of my um strategies that I needed to to work on was to get staff involved in and we well I coined the term ‘Become BCI Savvy.’” (130321.001) (note a comment by a HoD, and BCI = Business and Community Interaction)

- individual academics, as a point of principle, should be able to choose whether to take advantage of any rewards available as a consequence of their KT work
- the R&IS needed to reflect the variety of different motivations academics had for becoming engaged with KT:
 - to meet employer expectations
 - for employment security and promotional opportunities :

"I do believe that quite often if they can see that the professional benefit of what they're doing and how it will enable them to further their career and but I will say this that I do belong to quite a young department not that that should be any different but I believe everyone is very committed to their careers at the moment and and the stars are the limit at the moment for a lot of us with what we want to achieve." (130327.001)

- to meet personal desires to 'make a difference' in society and to be seen to be adding value to society as a result of investment from the public purse:

"I just think it's an obligation sort of a moral obligation almost given the way we're funded but I think it's a painless one given the benefits are obvious you just get all these interesting connections particularly in behavioural sciences and social sciences whatever you're doing with other people is data so surely you have to be interested in that so why aren't you why would you why would you shy away from it." (130313.002)

- for personal ego
- to ensure that research outputs are disseminated and have impact
- to develop enhanced entrepreneurial/enterprise skills that is transferrable
- reputation and profile building
- building partnerships to benefit research and teaching objectives
- nurtures new research and energises teaching:

"Yea yea [pause] it's about and about the rewards sometimes is social rewards isn't it's not so much kind of and uh and uh because as an organisation we're all kind of a social entity it's about having this social reward whereby people are sort of recognised by the by the organisations um as being you know an making sort of you know sort of you know and uh working for the for the good name of MU that is what is good about being part of a group of people who is in the business of of of... getting recognition beyond MU." (130318.001)

"I think it's important I think it I suppose it's part of the s- [pause] it's a social agenda I suppose it's about about the big questions about what is what are

universities for why do we do what do is it entirely inward looking do we do it just because it increases the sum of human knowledge and that's a good thing or [se] do we look for there are times you know it's it's not it's difficult to define exactly what it would be but there's an engagement and it's engaged with what's going on around us." (130320.001)

- financial gain should be available to individuals and/or groups, depending on the nature of the work, but this would be post the completion of the work:

"unfortunately money speaks or fortunately whichever way you want to think about it." (130312.001)

"you're basically saying to staff um it it's a sweetener if anything are you saying to staff 'Look we recognise that this may be something that is over and above what you are already doing um and we'll either pump prime with initiatives funding to enable you to undertake to release you from work to enable you to branch out' or with a rewards scheme we're actually saying 'We recognise that your Work Programme may be full but if you were able to undertake this additional work then we would be able to reward you over and above your normal salary'." (130410.001)

- if a group has been responsible, the reward should be shared but only so far as those who have gone above and beyond WP hours
- there was a need to ensure consistency between rewards and the honorarium and HERA contribution points additional payment schemes
- there should be flexibility and freedom to decide how to use incentive payments, including supporting teaching and research objectives. It was suggested this decision be at Department level, but with a focus on meeting corporate targets
- KT and R&Is specifically can create a healthy competition intra-Departments and inter-Departments/Schools
- use of incentives to promote KT activity needed to be managed so as not to destabilise other Departmental commitments, particularly teaching
- that engaging with KT develops an academic's personal skills and competencies (e.g. contract managements, bidding for funding, client relationships)

Nature of rewards and incentives

- It was important to manage the perceived and actual differences between incentives and rewards, so as to enhance KT activity: incentive as the motivator and aspiration, reward as the benefit. Incentives were more likely for the Department/Groups and rewards for individuals, but there were considerable grey areas of overlap:

“I think where people really are overstretched and their Work Programmes are right up to the line and they’ll say ‘yea I can do this’ and to actually be able to say to them ‘Look if you could do this we would be able to reward you’ I think that that’s it is very motivating I think especially in the current financial climate.” (130410.001)

- significantly, rewards should allow for personal financial gain and additional budget to ‘groups’ responsible for income generation but this could be in various forms, such as:
 - positioning for promotion
 - purchase of research and/or teaching aids/equipment
 - supporting attendance at research conferences:

“they can feel more involved in research because otherwise those people never get to go to conferences and become part of that community so that was very enabling for them and I think they valued that very highly so I felt the strength of having those people going to the same thing as a group um was much more motivating than um if I’d just said you can all have £300 and go to something that you’d like to go to.” (130321.001)

- to fund work programme remission for non-teaching activities
 - being able to support ECRs through ‘returns’ to fund small projects
- the management of the R&IS, as developed, needed to be introduced in a way that showed understanding that academics valued, and were motivated by, recognition for making a difference in society:

“so you want to engage in that process to ensure that your research or evaluation whatever it is doesn’t sit in a journal in a textbook and never get read or used by anybody but again it really feeds back I think a lot to self-promotion as well and actually that sense of satisfaction that you are making a difference “(130312.001)

“it’s got an intervention at the heart of it and so this this is all about doing some good for people.” (130313.002)

“I want to make a difference.” (130318.001)

“I still was managing to remain very in touch with teachers and children and seeing the difference this this programme was doing for these children.” (130319.002)

“I think it lends validity to a lot of things that [coughs] that we do in an academic setting it lends more validity sometimes it breaks down the tendency for academic activities to drift off into entirely close private world of their where the gap between what we do academically and and the non-academic world becomes so wide that the validity of what we do academically can be subject to question.” (10320.001)

“so for me it’s kinda two sided it’s one that you’re bringing in income which is good because it helps you develop other things you can then use that money to perhaps feed it back into further development and so forth but also it builds up your credibility and reputation so it’s got kind of two elements to it so for me it’s hugely important.” (130319.001)

- rewards needed to be meaningful.

Procedures and processes

- Clearly defined procedures and processes were required for any successful R&IS:

“but it does require management I don’t think I mean you can [emphasis] do it as a free for all and just see what happens but I I think it will be a longer journey you know that would be a more natural evolutionary thing and I don’t think this is I think this is a case of artificial selection rather than natural selection you need to kind of um you do need to plan it and you really need to know things about the people who you’re working with.” (130313.002).

- the R&IS should operate and adhere to published timelines
- any application process should be brief and easy to follow
- if there is a bidding process as part of an R&IS, this should be announced before the academic year of spend, to allow time to consider options

- rewards should be paid after the completion of the work
- the incentives part of the R&IS should be subject to an annual bidding process at Departmental level
- the bidding process should be clear at both Departmental and School level.

Ethical/rights considerations

- The R&IS needed to be fair, equitable and transparent in terms of decisions and allocations
- there should be, wherever possible, open access to the R&IS for all
- the R&IS should allow for consultation on decision-making principles (e.g. within a Department)
- a semi-independent senior academic within the School could act as an arbiter in cases of dispute (note: suggested by Research and Knowledge Transfer Committee (RKTC) following submission of initial R&IS).

Guidance/advice and administration

- The administration for the R&IS should be clear, consistent and limited in bureaucracy
- key senior staff needed to take on more responsibility for supporting and advising academics within their Department
- the R&IS needed to be well-managed to limit disenchantment due to some benefitting and others not
- administrative arrangements within MU for KT support should be more seamless and less time consuming in process terms

Work Programme (WP) issues

- As a valid academic activity, KT should be incorporated into WPs wherever possible. However, some KT cannot be planned, so flexibility is required
- individual financial gain was acceptable, but only if that individual's WP was full, as agreed by their HoD. WP should be used first, before payment for KT work above that
- the need for a better balance within an academic's portfolio of teaching, research and KT:

“people have seen KT as being a box that impinges on their research and their research is what they're judged by once they realise that that's not the case and these things can be mutually um beneficial uh then I think they're more willing to engage in it” (130313.001)

*“it’s not necessarily that people’s Work Programmes are enormous it’s just the spacing means that there’s no recognisable time out for people to engage”
(130410.001)*

- an individual academic with a full WP could choose whether to accept additional KT work
- there was an absolute requirement for a standardised WP approach across the School, if not University.

3.4.4 Implementation of the R&IS

As a result of the data interpretation and emerging key themes, a School R&IS was developed that attempted to apply as many of the research action principles as possible.

The R&IS was presented to the School (RKTC) on 15th May 2013 as part of consultation and peer review participation objectives. The RKTC made some minor suggestions, most notably raising the maximum allowed personal financial gain from £5,000 to £10,000. The final revised version of the R&IS was announced to all academic staff on 24th May 2013 (Appendix 32).

Learning in Action – Evaluation

This section reflects on the use of NVivo as a tool for interpretation.

Experiencing

I found it to be important to analyse the transcripts as soon as possible after their completion so that the memory of the interviews was fresh in my mind. The turn-around from interview to transcript was short, usually within a week but normally less, and my subsequent analysis was within two days of receipt. I found my analysis using NVivo to be frustrating – the process of coding and categorisation appeared to go smoothly (if time-consuming), but the semi-structured interview led to the use of the core questions as main ‘nodes’, often leading to their own categories. I also found the lack of data compatibility with query capabilities within NVivo disappointing as it did not allow a full exploration of data using the analysis facility.

In terms of interpretation, I noted that clear themes emerged from the data. But a significant surprise was the apparent lack of knowledge that remained on the nature of KT and whether MU supported it. Although only one participant suggested active antipathy to KT in his Department, most showed a lack of full understanding, even those employed on KT contracts! I believe this indicates ongoing and significant communication and understanding issues. On a more humorous note, after undertaking a word search I found the word most used by participants to be ‘um’. Further, one SL was so inarticulate that one answer to a question, which lasted for several minutes, I found completely undecipherable.

Understanding

I found that the use of a semi-structured interview, and specifically the interview guide, did provide a good level of continuity between respondents and allowed direct comparison between responses. However, as the analysis through NVivo progressed, it was clear to me that there was perhaps too much structure, which may have been restrictive to participants. This was not an issue raised by any participants, indeed most were complimentary about the breadth of the interview, but I did find that the NVivo analysis in using the main question areas as key nodes rather limited further levels of interpretation. I posit that this may not be a significant issue as the ‘categories’ formed were directly influenced by the literature, the Cycle 1 Survey outcomes and my own experience. Given the dominance of the question guide in ‘auto-coding’, it would be interesting to compare this with more open interviews, to code from within data with no preconceptions and find if similar themes emerged. In my view, the use of the auto-coding had led to the inappropriateness of some ‘query’ facilities within NVivo, hence

a disappointing inability to use the attractive results display capabilities. In addition, it is clear that several nodes overlapped – sometimes I found it difficult to code a personal approach as a value or a cultural aspect, or both.

Judging

The use of NVivo enabled me to make sense of the data and it provided a systemised approach to seeking themes, but I felt it to be rather mechanical and contextual aspects could be sacrificed due to the fractionalisation of data. The software allowed me to process and construct a database of the transcripts and subsequently to interpret these, which would have been challenging without its support. I was able to generate the themes for the R&I from the data processing approach and I found it a valuable method of interpretation.

Acting

The key action at this stage of the research was for me to use my interpretation to create a new R&IS. Lessons learned for future use of these methods of inquiry included:

- * the need to quality assure and interpret transcripts from a third party as soon as possible after interviews
- * to take care with the construction of any future semi-structured interviews and allow a more open style
- * to use the positive aspects of NVivo, but to adjust to ameliorate the identified disadvantages for future research cycles.

T3: TRANSITION PHASE 3 – CYCLE 2 TO CYCLE 3

This transition section notes a number of aspects considered during the implementation stage of the R&IS, as devised within Cycle 2. It is an extensive transition phase as it highlights reflection and thoughts relating to the process of introducing the R&IS as part of a change management process, the flexibility required as part of its introduction and concurrent pre-understanding development in preparation for the next Cycle. It provides a bridge from the development and initiation of the R&IS through its implementation in Cycle 2 to the next Cycle, including synthesis and reflection on the empirical research findings in comparison to the literature. Cycle 3 emerged quite naturally from the progressive, iterative nature of the previous AR Cycles, as did its focus on embedding the R&IS and how a more participative approach could assist the process.

T.3.1 Procedure for introducing the R&IS

In identifying the errors of firms implementing rewards in the commercial sector, Cissell (1987) recommended approaches for success that I have translated to an academic setting (italics illustrate my considerations of these points within the R&IS):

- Ensure the reward is relevant to the nature of the academic area and that academics can clearly see the link between their performance and the reward. There is often a greater reward when this comes to the Department rather than individuals. *The link between reward and performance was implicit within the R&IS and the internal bidding process, tied to Departmental objectives, ensured relevance to the academic discipline of resulting 'spend'.*
- Clearly link the reward system to performance measures and these in themselves must be understood by the academics, allowing for flexibility in the nature of rewards; one type of reward may not suit all academics or discipline areas. *Targets were set for each Department for KT and the flexibility in the nature of the rewards and how it could be applied were built into the R&IS.*
- Ensure that the reward has an individual and Departmental component, motivating both individuals and the group as a whole. *The R&IS allowed for both reward and incentive to group and individual.*
- There should be equality of opportunity for academics to become involved in obtaining rewards. *The R&IS allowed for an open and transparent process of allocation within the Departments.*

- The approaches to rewards should be supported by middle management. *The R&IS was introduced and operationally managed by HoDs, engaged in the process.*
- Middle management should assist and support academics in how to achieve rewards and there should be feedback so academics can understand when they are eligible or not for rewards. *How rewards can be achieved should be clear through the R&IS, but requires continuous review.*
- Academics should be involved in decision making on the implementation of rewards. *The AR project involved academics in the development and implementation of the R&IS.*
- Academics need to believe that there is potential to achieve rewards as a result of their activities. *This was implicit in the R&IS.*
- A broad range of rewards should be considered, not just cash, and when rewards are due they should be implemented in a timely manner. *The reward allowance could be used to support a variety of general academic objectives and not just KT.*

The introduction of any new policy or plan has to be considered on an evolutionary basis, recognising existing practices and remaining relevant to the organisation (Brown, 2001). One should not seek off-the-shelf, fashionable ‘fad’ reward practices that are perhaps not relevant to the organisation. The R&IS was relevant to the various Departments within H&E as it originated from the participants representing those areas and was rooted in long-term corporate objectives, as recommended by Lawler (1990). Brown (ibid) noted the most effective reward strategies are living processes and, as part of implementation and reviews, that these can be adapted for emerging circumstances and practice ‘learning’ (ibid, p.246) and referred to the absence of appropriate review and evaluation stages from the introduction of a reward scheme as its Achilles heel. Cycle 3 provided just such an opportunity for an evaluative review of the implementation phase and again demonstrated the value of the AR approach when introducing and implementing policy.

Appendix 33 provides the proposal and appendices for the identification of both targets and rewards/incentives for 2013/14, resulting from corporate objectives. In accordance with the R&IS, access to available budgets should be through a transparent process with opportunity for all academics to apply. However, as long as core principles were adhered to, no set process for bidding was defined in the R&IS, thus allowing for differences in the academic focus of Departments and discipline/professional influences. All Departmental processes were collated for audit purposes (e.g. Appendix 34a and 34b).

T.3.2 Introduction of the R&IS as an example of change management

The introduction of the R&IS, whilst a relatively minor intervention within the whole organisation, raised issues of change and project management. According to Brown (ibid), there were three critical factors to implementing a reward strategy:

- communications with, and involvement of, affected employees so that they were fully aware of the strategy
- performance management practices in its introduction
- successful management of change that the introduction of such a scheme will inevitably bring

Ulrich (1998) (in HR Horizons, 2014) identified seven factors for successful change management (my responses related to the introduction of the R&IS in italics):

- **Leading change** entails securing a visible and enthusiastic sponsor and leader of the proposed change. *In addition to myself as the responsible senior manager, the School's Senior Leadership Team (SLT) provided direct support for the Scheme's implementation.*
- **Creating a shared need** requires letting others know why change is needed and ensuring that the perceived need for change is greater than the resistance to change. *The process of generating the R&IS engaged staff actively in the introduction of a policy directly affecting their situations.*
- **Shaping a vision** involves articulating what the new process or model will look like when you are done. The vision is expressed in the corporate strategic plan to enhance KT and external partnerships, and also within School planning priorities which themselves are both informed by and determine Departmental plans. *The specific vision and process of the R&IS was shaped by the participants as much as organisational objectives.*
- **Mobilising commitment** requires identifying and getting key stakeholders involved and on board with the desired change. *Achieved through the SLT and also through highlighting and promoting the rewards provided. Participants within the AR could also act as agents of change.*
- **Changing systems and structures** entails adapting or replacing previous models so that change can occur, since many change initiatives fail simply because people try to institute a new process using old models. *Although there had been a rather limited financial 'returns' arrangement in place previously, this more formal variant was developed as a result of engagement with participants.*

- **Monitoring progress** involves measuring how you are doing compared to established benchmarks. *The School had in place a process of target setting for both KT and research. To monitor performance, the RKTO supplied H&E with tailor-made quarterly data demonstrating financial returns and contract values over that period.*
- **Making change last** entails developing action plans with assigned ownership and timelines in place to ensure an ongoing commitment to change. *The key action was the development of the R&IS for implementation in academic year 2013/14.*

The recommendation by Bushardt et al. (2011) that a rewards scheme should fit the cultural norms was critical in implementing the R&IS in H&E, as MU was undergoing major change to become more research-led. Unless academics bought into KT as part of the new culture, it was unlikely to have significant impact; implementation had to be explicitly tied to the new direction. The process of implementing the R&IS through AR engaged directly with academic colleagues who, through the actions derived, assisted in the management of its introduction. Being able to demonstrate the synergies between research and KT became critical in ensuring the R&IS was relevant to corporate objectives. As Armstrong and Brown (2006, p.163) stated:

“implementing a reward strategy is much more about process than design – *how* it will be done rather than *what* will be done.” (their italics)

Many of the responses in the Cycle 2 interviews focused on process and, thus, the implementation of the R&IS needed to be considered as a process that engaged H&E academics. Managers needed to be aware of the importance of developing capacity and competence in and commitment to the R&IS. Armstrong and Brown (ibid), Brown (ibid), and Armstrong (2012) stressed the importance of communication and involvement of end-users for the successful introduction of a reward scheme. As Brown (ibid, p.185) stated:

“people like to be involved, even if any resulting programs do not align exactly with their personal wishes, so you often get a Hawthorne type effect, with an improvement in performance brought about simply because we all respond to this sense of being involved and attended to.”

Whilst a consultant at Towers Perrin, Brown established that many companies saw the reward strategy as part of their top-down management control arrangements (Brown, ibid). Although noting recent improvements, he suggested this remained an impediment to the effective introduction of rewards strategies and that the engagement of employees in development,

implementation and process review was required in the successful introduction of such strategies. Armstrong and Brown (ibid, p.229) considered that:

“only a more open and two-way dialogue-based approach to rewards communication, we argue, will realise the full potential of strategic reward management....”

The use of an AR project approach to introduce the R&IS involved and engaged participants in the process, by its nature. The CIPD (2009) survey noted that many R&I schemes fail due to poor communication. The 2013/14 R&IS for the School was communicated in a variety of ways:

- in June 2013 an e-mail was sent to all staff with information about the R&IS
- the R&IS was an item on the May 2013 agenda of the RKTC (membership including Departmental research leads)
- the R&IS was introduced at H&E’s SLT in July and September 2013
- the R&IS was announced to a School-wide meeting in September 2013.

The R&IS was also introduced as part of the induction pack for new academic staff. However, the most successful promotional approach was through the distribution of the allowances under the R&IS, which provided colleagues with a visible and obvious financial benefit from engaging with the Scheme. The amounts available for 2013/14 and 2014/15 were substantial, and attractive at a time when academics were expected to demonstrate enhanced outputs for research and KT. The requirement for an open and transparent bidding process provided an effective approach to raising the profile of the R&IS.

T.3.3 Need for flexibility during the introductory phase

The necessary data supplied by the University for setting research and KT targets and allowances were not available in July as expected, leading to delays in the R&IS bidding processes for Departments that could have led to a significant reduction in the impact of the R&IS by reducing the implementation time. As I finalised the 2013/14 allowances, a number of Departments notified me that they would prefer to run a joint bidding opportunity for KT and research. Whilst KT returns were far greater than research funding allocated to the Departments (by a ratio of 9:1), I was aware that there was great pressure to increase research outputs to meet the overall strategy of MU to re-position itself as a research-led institution. In addition, the profile of KT had been raised within MU, but mainly in synergy with research objectives. School policy recognised the synergies between research and KT – the nature of KT is that opportunities ultimately arise from the development of research output (knowledge).

However, I was concerned that that R&I allowances could have been disproportionately diverted to research outcomes and that KT would fail to be enhanced or, more pointedly, that academic staff would not be motivated to be engaged in KT. Overall, given the suggestion by Bushardt et al. (ibid) that such schemes should fit with the predominant culture of the organisation, together with a need for flexibility to meet individual Departmental aspirations, it was agreed that research and KT allowances could be combined in a joint bidding process. This level of flexibility is suggested to be one of the key components of a successful reward and incentives strategy (Brown, ibid).

Ideally, all academic staff had the opportunity to be engaged in a similar open and transparent process under the R&IS, but there were practical issues in that each Department had different strategies and priorities. I was aware that each HoD also adopted a different blend of leadership styles, some preferring a more *laissez-faire* approach to processes and procedures. It was my judgment that such differences in approach would not be fundamental to investigating the research aims. In order to progress the research, I accepted the slight variations in approach of allocating rewards/incentives by Department. I intended to reflect on this as the interviews and ARG progressed to see if there were lessons to be learned for future R&IS cycles.

Interestingly, two Departments made it a requirement of bids that the impact pathways were clearly stated. The most sophisticated process was that used by the Psychology Department, which established a research group to evaluate bids (see Appendix 34a). As few bids for direct KT support were received, the Department chose to run an additional call for bids specifically for KT and retained some funding specifically for that purpose.

T.3.4 Additional competitive inter-departmental allowance

An aspect that emerged from Cycle2 was that there should be a School-level competitive bidding opportunity. A further £20,000 was made available in 2013/14 and 2014/15 to support inter-Departmental bids. As part of broader strategies to raise the profile of research, a research/KT symposium was held in July 2013, helping to identify a number of future academic themes as the main priorities for the inter-School bidding process. A summary of these can be found in Appendix 35. A disappointingly low number of bids was received for this funding opportunity in both 2013/14 and 2014/15. In both years a small review panel was formed from the School RKTG that was to judge and rank submitted bids, scoring against required criteria. Within each bid, there was a strong case made for the validity of the research proposal. In both years, the

selection panel discounted several bids due to their lack of relevancy, but allowed a small number that it judged had met, or partially met, the criteria. The panels commented that bids were generally poor in clarifying support for broader KT/research strategies of their individual Departments and, importantly, that the pathways to impact from the research were also unclear. In the current *zeitgeist* where universities need to justify impact from research/KT, this illustrated a broader staff development need.

T.3.5 Context and nature of the R&IS

The R&IS, as devised, emerged directly from the action cycle and was a reflection of the data as interpreted from the interviews. Thus, it was reflective of the views and opinions of those interviewed. Whilst potentially having some experience, knowledge and competencies around leadership and staff management, the participants were unlikely to have specific, extensive knowledge of the theoretical aspects of rewards schemes. This could be a disadvantage of the AR process in the creation of policy, as decisions might be taken on an ill-informed basis. Either the facilitator of the AR needed to ensure all participants had the information to be able to make informed judgements and/or, ultimately, the senior manager responsible within an organisation with an AR approach needed to take decisions based on a variety of other factors in addition to the AR action outcomes. In terms of the principles outlined by Cox et al. (2010) and Armstrong (ibid), the AR process provided clear advantages that the R&IS emerged and was directly influenced by users and, hence, was more likely to be successful due to their engagement in its development. The interpretation of the interviews resulted in an R&IS development process that reflected the suggested 'Fundamental Values' as proposed by Armstrong and Brown (2006, p.6), (my response in italics):

- Fairness – an open process, including decision-making. *In most cases this involved a group of colleagues in the discipline. The R&IS allowed for recognition of performance at both individual and team levels*
- Equity – *all academics could apply and bids were judged against Departmental criteria*
- Consistency – *the R&IS itself aided consistency, while allowing flexibility at local level*
- Transparency – *the process itself was open to scrutiny by all academics and decisions were communicated to all.*

My research suggests adding 'Clarity', to cover issues such as the timing of rewards, process, availability and award criteria.

T.3.6 Reflections on the role of financial payments as motivators as part of the R&IS

Shields (2007), Perkins and White (2009), Armstrong (ibid) and Armstrong and Brown (ibid) noted that reward schemes reliant exclusively on financial payments were unlikely to succeed. Conversely, Siegel, Wright and Lockett (2007b), Lach and Shankerman (2008) and Lai (2011) suggested financial reward, individual and/or to 'Faculty', was an important factor in KT engagement. Recognising that "cash is universally accepted as a medium of compensation", Cissell (1987, p.55) suggested that alternatives, which he termed 'merchandise', could be equally effective. In the commercial sector luxury items as rewards might be effective, but in academia this is more likely to be technology, equipment or other material goods supporting academic objectives relevant to research, teaching and KT. Cox et al. (ibid) argued that a predominantly economist's view of the nature of rewards, built on a history of econometric research, led to greater focus on the value of financial rewards. A critical issue was that employees must be engaged, consulted and involved in decisions on the nature of the rewards available. Gerhart and Rynes (2003) proposed that finance (pay) was the only meaningful reward, while Cox et al. (ibid) noted that those researchers traditionally noted for work on employee motivation (e.g. Alderfer, 1969; McClelland, 1961) did not even mention pay as a significant motivator, beyond an acceptable level of basic wage. They proposed that psychological contract theories (the relationship between the employee and their employer) were more relevant to individual motivation, but that managers had not responded to this theory either because they simply did not believe it to be appropriate or were focused on pay as the predominant method of reward, concluding:

"the evidence discussed shows the dangers of fixation with financial incentives as the default reward mechanism of choice, and with concepts of reward strategy that focus on planning rather than processes, concepts rather than communication, and intent rather than impact. The function of pay to recruit and retain staff is undisputed, but it must not be confused with broader total rewards mechanisms that will elicit engagement and higher performance from employees in their roles." (ibid, p.258)

Armstrong (ibid) provided a useful review of the various opinions on the use of financial rewards. He noted a strong and vociferous camp that disputed whether financial rewards had any impact on motivation to perform. Positions taken on needs-based motivation (see literature review of Appendix 36) downgraded the impact of extrinsic motivators such as pay

rewards. In particular he pointed to influential publications by Khon (1993), Pfeffer (1998a) and Furnham (2006) that were highly critical of the role of pay rewards on motivation and subsequent performance. There was a strong assertion that employees were motivated by other issues such as job security, a better work-life balance, enjoyable work environment etc. However, Gerhart and Rynes (2003) had established a link between pay structures and motivation to perform, and it may be that researchers have confused *rewards* with *incentives* and that financial aspects can be a part of both. These contradictory positions were reflected in my Cycle 2 evaluations, the results concurring and confirming the work of Osterloh and Frey (2000) and Cox et al. (ibid) in that both intrinsic and extrinsic motivators impact on an academic's engagement with KT.

Some participants supported financial rewards as desirable and appropriate, whereas others disagreed. The responses to questions around the role of KT and 'Values & Beliefs' showed that there was motivation to undertake KT for non-financial reasons (career progression, kudos, making a difference, recognition, etc). There was broad support for rewards being available to the team or Department responsible for KT activity, also a positive response to allowing financial reward at the individual level. The R&IS needed to consider and allow for this complex scenario.

A significant finding of Cycle 2 was the desire amongst participants for an incentive to be provided to Departments based on performance. To safeguard School budgets, the Dean approved a maximum amount to support the R&IS, which was then distributed to Departments. This provided School-level security, however it meant there was no direct correlation between performance and reward. In addition, R&IS returns needed to be used in-year. Rewards were assessed and calculated as part of annual budgetary planning and, whilst they were based on past performance, allowances were made on the basis of expected income as MU's systems did not allow any carry-forward of income generated in the previous academic year (apart from longer term research and KT projects). The School was set two annual KT targets: the total contract values achieved (used by MU in the annual HEBCI returns) and a School-based returns target (a combination of margin and share of University indirect costs). Whilst a true performance-based rewards scheme would be judged on the returns achieved, this discriminated unfairly against some large-scale projects with lesser returns. These provided significant contract income, generating a profile for H&E and its Departments, and supporting partnership developments (such as the Families and Schools Together project,

at c£1.5m per annum). The R&IS, therefore, allowed for a reward based on both returns and contract values to the ratio of 75% to 25% of the budget available.

The provision of a reward to the Department was a form of team reward. Perkins and White (ibid) noted the popularity of these in the 1990s. Research undertaken on public sector reward structures by Makinson (2000) suggested both positive and negative outcomes. Team rewards were based on the contribution each member made to organisational objectives as a whole. There were advantages to rewarding teamwork when resultant outputs aligned with overall group objectives. Disadvantages included: concerns that not all team members contributed; that success depended on team size and was demotivating for those preferring individual rewards; and that measuring team performance was challenging and members felt pressured to achieve. Brown (ibid) suggested that the most appropriate team reward was recognition. Shields (ibid) noted various approaches to distributing rewards, including each member receiving an equal share, a bonus being paid as a percentage of base pay, awards based on appraisal ratings and, as with Brown (ibid), rewards based more on recognition than pay.

One could describe the R&IS as a form of *gain-sharing*:

“Gain sharing is a form of collective short-term reward whereby the organisation seeks to share the financial benefits of any improvements in productivity or performance with its workforce.” (Perkins and White, ibid, p.220)

However, the R&IS did not entirely fit this profile of collective performance measured against goal outcomes. The R&IS provided Departments with a clear understanding of the budget available within the year, allowing investment in discipline and team-related objectives. Individual payments for work above and beyond expectations were allowed for in the R&IS as a form of variable pay reward, yet not in a traditional sense, since these were not necessarily related to results but in the form of an extension to an existing contract. They were not a bonus *per se* – the benefit was that there was an agreement that academics could earn more from their individual activities. In their professional contract there is an assumption that academics work flexible hours. To receive additional personal payments under the R&IS, they had to be able to undertake KT tasks with no negative impact on their normal duties. They had choice over balancing these demands and it was recognised by the R&IS that it was important to achieve an appropriate work–life balance. Safety measures included the need for HoD approval that a KT activity was in addition to Work Programme agreements, with a proxy safeguard through a limit on the maximum income that could be earned in this way.

T.3.7 Reflection on intrinsic and extrinsic motivating factors

In terms of supporting more intrinsic motivators, the engagement of academics in KT was a corporate goal supported and promoted in a variety of ways and reflected in the corporate plan and academic job descriptions. MU's revised academic role profiles accentuated the expectations of performance in research/practice outputs, with a more limited pathway for those focusing specifically on KT. There were requirements in all profile promotion routes to support KT development, and it was a consideration in terms of internal promotion opportunities, albeit not a justification in itself. An R&IS alone could not address all issues that might motivate staff to be engaged in KT, but could meet some of the motivators and raise the profile of this academic activity. The resultant R&IS addressed this complex situation and mainly had two key themes:

1. Intrinsic motivation – Each Department operated a competitive bidding round for the funds, using a fair and open process to decide on allocation. Flexibility was inbuilt so that Departments could choose where to invest. Of course, this was also an incentive, as disciplines could receive a budget to advance their objectives. The intention was that Departments could use this budget to support more intrinsic dimensions, such as improving the work environment, supporting colleagues in achieving other academic objectives, funding staff development opportunities etc.
2. Extrinsic motivation – Opportunities to incentivise staff through direct financial rewards to underpin academic objectives or payment of additional monies for KT work beyond their Work Programme commitments.

T.3.8 Context of the R&IS for developing KT in H&E in terms of the wider university

Applying a 'Total Reward' approach would allow MU to take a cohesive and integrated approach to rewards management at the organisational level. Indeed, the absence of a formal total reward strategy may be a key opportunity for the application of further research. However, the boundaries of the R&IS were within H&E and more narrowly related to supporting KT growth. The R&IS did not purport to offer a fully developed R&I approach covering all aspects of employment benefits, compensation etc., however there may be aspects or approaches that could provide guidance for others considering such schemes. This raises questions of alignment. Brown (ibid) and Armstrong and Brown (ibid) noted two forms of alignment: 'vertical', where the rewards scheme was reflective of the local business strategy;

and 'horizontal', where the scheme fitted within the total rewards approach of HR programmes within the organisation. The devised R&IS supported MU's ambitious targets for the development of KT and its integration with overall academic objectives, but predominantly was aligned in a 'vertical', H&E business-need sense. There was less coherence in 'horizontal' alignment. The R&IS did not necessarily contradict or clash with any HR practices or intentions and its limited nature, in comparison to the HR strategy of MU, meant complete cohesion was unlikely. However, it could be argued that, indirectly, the R&IS had more 'horizontal' alignment than might at first have been evident. It supported performance enhancement, improved work environments and provided resources to improve work satisfaction, given that many respondents had reported these factors as being reasons for engagement in KT. As Armstrong (ibid) and Armstrong and Brown (ibid) noted, the most successful reward schemes are based on an evolutionary approach rather than a revolutionary, 'one size fits all' approach. In this way, the R&IS could be continuously evaluated and its alignment with, and impact upon, other University practices and procedures considered during future iterations.

T.3.9 Embedding the R&IS and related issues of motivation to engage with it

From this transition phase of thinking and experience, it became evident that the next Cycle should use an AR approach to assist the School in embedding the R&IS to enhance its effectiveness. As a key part of this embedding process, the research would also seek to establish a deeper understanding of the relevant motivational aspects.

4.0 Cycle 3: The Role of Motivation and Embedding the R&IS within H&E

Given the focus of the Cycle, I initially return to my literature review to outline some key issues around motivation and their relevancy for engagement of academics with KT. The resultant research approach was designed to explore further motivational aspects of engagement with the R&IS and, through an Action Research Group (ARG), to focus on the participation of H&E academics in embedding it.

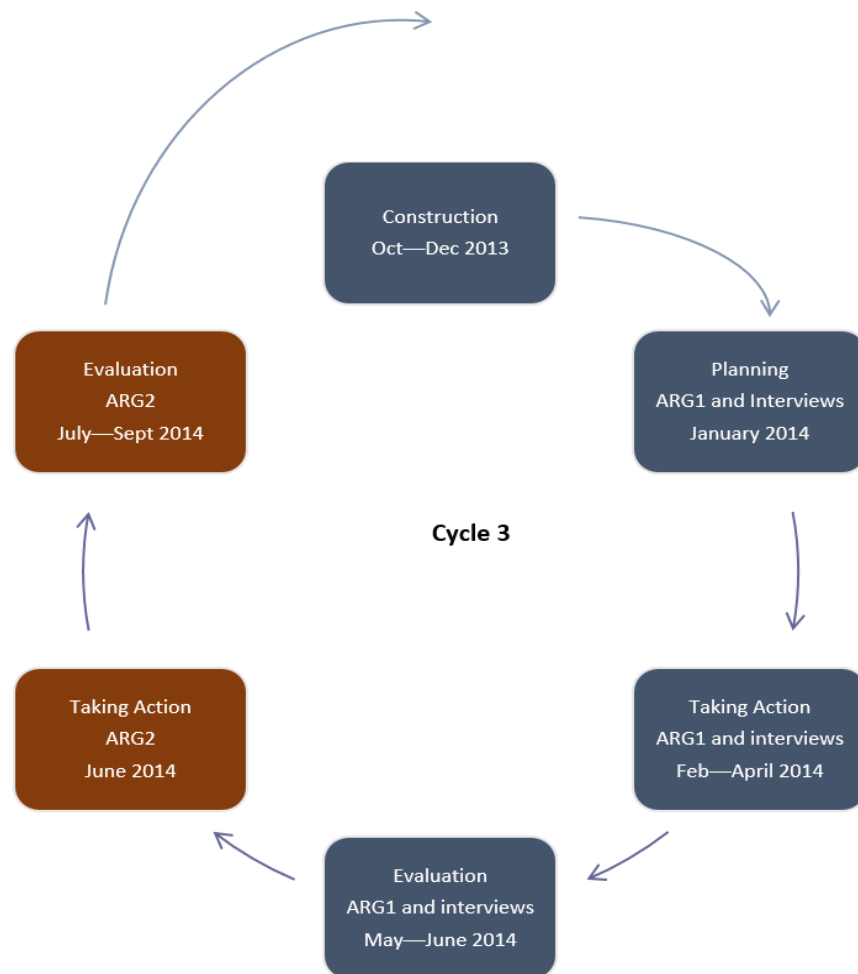


Figure 17 Timeframe and stages of Cycle 3

The research adopted a combination of personal interviews and the ARG to address the aims for this Cycle. Given the complexities of this approach, the sections 'Taking Action', 'Planning' and 'Evaluation' stages outline the interviews and the ARG separately before they are combined to draw out key findings.

4.1 Constructing

Despite considerable research in the field, there remain unquantifiable aspects behind why academics do or do not engage with KT. Indeed some, such as Tartari et al. (2012, p.674) have highlighted that the observable behaviour of academics may not actually match their attitudes, when investigated on a one-to-one basis:

“By probing the attitudes of academics and seeing how these attitudes are associated with more observable forms of engagement, it is possible to get under the surface of academics’ industrial engagement and to better understand the ‘why’ and the ‘how’ of their engagement with industry.”

This section provides a contextual overview in terms of motivational aspects as relevant to rewards and KT, culminating in clarification of the main research aims of Cycle 3.

4.1.1 Motivation of employees for consideration in an academic setting

The following key relevant aspects were identified through a focused literature review, in Appendix 36:

- Organisational characteristics played a key role in individual motivation (Buchanan and Huczynski, 2010; Wilson, 2010).
- Earlier theorising on human motivation focused particularly on assessment of needs. This suggested that people were motivated by a set of common needs that vary by priority and given situations, such as the work environment (Maslow’s Pyramid hierarchy of needs 1954; Alderfer’s ERG theory, 1969; McClelland’s need theory, 1961). These needs are reflected in the motivation of the academic.
- Sub-cultures within an organisation could be more important than the overall organisational culture (Egan, 2008; Lok et al., 2005). This might indicate that academic disciplines have varying levels of motivation to be engaged in KT (Olmos Peñuela et al., 2013), although others did not find this (D’Este et al., 2013).
- Taken further, the culture of the individual may be relevant (Brown, 1998; Handy, 1999). This led to consideration of the influence of personality traits on motivational thinking (McRae, 1992; Bratton, 2007; Myers, 1962; Buelens et al., 2006).
- The psychological impact of cognitive approaches to individual motivation have been recognised (Perkins and White, 2009; Armstrong, 2012). Employees made conscious decisions on prioritising choice of actions based on their values and, in terms of

rewards, whether they satisfied expectations, including the relationship between effort and reward (Porter and Lawler, 1968).

- The role of the impact of intrinsic and extrinsic motivators was a key factor (Herzberg et al., 1959), particularly as applied to KT (Osterloh and Frey, 2000).
- Finally, the issue of rewards as specific motivators was considered. Osterloh and Frey (ibid) noted that there were at least two views, that of the economist (such as Transactional Cost theory) and the psychologist (such as implicit contracts). Some also questioned the value of extrinsic rewards, which might be corrupting (Lepper and Greene, 1978; Frey, 1997). This view was balanced by those who believed extrinsic rewards served as motivation for KT (Jacobson et al., 2004; Siegel et al., 2003; Siegel and Phan, 2005; Lach and Shankerman, 2008; Debackere and Veugelers, 2005).

4.1.2 Motivating individual academics to be engaged in KT

Existing studies suggested that academics were motivated through a complex range of inter-related factors. There was no simple correlation between financial reward and an academic being actively engaged in KT; indeed, many were incentivised by other factors. Where financial rewards had been used to induce enhanced KT performance, D'Este and Perkmann (2011, p.317) commented:

“implicit in any accounts of the entrepreneurial university is the assumption that academic researchers engage with industry in order to commercialize their knowledge. For this reason, policy makers provide monetary incentives to academics to facilitate their commercial involvement.”

Other researchers suggested that some academics, particularly social scientists, were more attracted to KT if it resulted in positive societal impacts. Olmos Peñuela et al. (2013) established that social scientists were more likely to seek interaction with non-academic communities to help solve socio-economic problems and societal knowledge needs.

In terms of motivation to engage in KT, a summary of some of the key factors that emerged from the literature review in Appendix 36 are:

- There were varying motivational factors that included: commercialisation of knowledge: networking and enhancing research through external relationships: access to resources (expertise and equipment): gaining additional funding: judgements on

contemporaneousness of research and teaching: (D'Este and Perkmann, 2011; D'Este et al., 2013).

- Engaging in knowledge exchange was motivated by attracting resources, obtaining knowledge or building social capital (Perkmann et al., 2013).
- There were three basic types of rewards across a range of extrinsic and intrinsic aspects (Lam, 2011; Stephen and Levin, 1992):
 - 'Gold' – financial rewards
 - 'Ribbon' – reputation and career rewards
 - 'Puzzle' – intrinsic satisfaction.
- Motivation may be seen as an outcome of interaction between external regulation and individuals' internal psychological need for autonomy and self-determination (Lam, *ibid*).
- Markman et al. (2004) did not find that financial rewards led to enhanced KT engagement amongst academics. However, there was evidence that financial rewards from KT activity impacted positively on the performance of Technology Transfer Offices (TTOs) (Lach and Shankerman, 2008; Siegel, Wright and Lockett, 2007b). Government incentives to support the work of TTOs in the UK to broaden KT activity away from the traditional narrow confines of 'technology transfer' has somewhat enhanced the level of academic participation in business engagement (D'Este et al., *ibid*).
- Motivation is multi-dimensional, crossing the gold, ribbon and puzzle aspects (Markman, *ibid*). Academics can be engaged by both extrinsic and intrinsic motivators, attracted by all three in different circumstances throughout their careers (Lam, *ibid*).
- There was a lack of clarity as to whether academic discipline impacted directly on propensity for engagement with KT (Markman, *ibid*). Opportunities to be engaged may vary (Wright et al., 2004). A science and engineering base may steer KT to more commercial outputs (Van Looy et al., 2011), while the humanities and social sciences may be more motivated to support people-based outputs, such as CPD and training (Hughes and Kitson, 2012; Ozga and Jones, 2006) and where social good is the end objective (Olmos Peñuela et al., *ibid*).
- At an institutional level, some departments appeared to be better at maximising KT output than others (Braunerhjelm, 2007; Arianna et al., 2008; Todorovic et al., 2011).

My research from Cycle 2, where participants were asked specifically on motivational aspects leading to engagement with KT, produced a variety of responses. In summary, these could be sub-divided into extrinsic and intrinsic motivating influences:

Extrinsic

- rewards should be applicable for people who always do extra and should be available for those working above Work Programmes
- financial arrangements (money) was seen as a key reward, for some.

Intrinsic

- KT enhanced a professional knowledge base
- peer pressure and team spirit were important
- positive impact on personal standing, reputation and profile, in MU and beyond
- sense of satisfaction that their work was making a difference to society.

When asked about values and beliefs, some participants focused on KT's benefits in building personal recognition, kudos and 'making a difference', others feeling that this should be expected of academics, with a variety of comments that receiving financial reward was a critical motivator. This demonstrated a complex range of intrinsic and extrinsic motivations for engaging with KT. Although my participants were more social science and humanities-based, most academics were motivated by a variety of intrinsic and extrinsic factors, often based upon their fluctuating circumstances over time – a hybrid similar to Lam's (ibid) findings.

Armstrong (ibid) suggested individuals were intrinsically rewarded if their work: enabled personal growth; stretched abilities; involved increased responsibility; allowed more autonomy; and that achievements were recognised. The Cycle 2 responses on the motivation of individuals demonstrated clearly this complex motivational landscape. The R&IS partially recognised the above factors through rewarding Departments for past performance, allowing investment to meet a broad range of academic initiatives (not just KT), engaging staff in development and personal growth, and providing opportunities for individuals to receive personal payment when undertaking KT above and beyond their Work Programme allocations. The R&IS thus used both extrinsic and intrinsic motivational factors.

The process of developing the R&IS followed Armstrong's (ibid) recommendations by involving stakeholders in its design, incorporating flexibility to meet cultural differences, facilitating a fair and equitable distribution of funds, and linking effort and reward. This last case provided an example of the relevancy of expectancy theory in terms of potentially impacting on the

motivation of an individual to engage with KT rather than other tasks (Vroom, 1964). An additional view is that engagement with KT had enabled academics to create relationships with potential external collaborators or partners who would be 'users' of created knowledge:

"Essential to the formation of this 'engagement capacity' is to provide mechanisms for academics to develop one-to-one relationships with industry that are meaningful and useful for their research and to provide them with high quality, efficient structures dedicated to technology transfer." (Tartari et al., 2012, p.672)

It is normal for UK universities to have devised some form of royalty-sharing to encourage the disclosure of new intellectual property (IP) development from research activities. Academics are incentivised to pass such IP through a university's technology support office, or equivalent, but D'Este and Perkmann (ibid) noted that levels of licensing activity can vary according to scientific discipline. In terms of motivating academics to be engaged more in KT activity, Lam (ibid, p.1365) noted that:

"if academics are motivated by a complex mix of extrinsic and intrinsic rewards, then policy initiatives focusing narrowly on providing financial rewards might be inadequate or even misplaced."

Additions to salary might be considered as more of a 'hygiene factor' than a motivator, but providing rewards in the form of funding for research or in some way raising academic profile and reputation may be more effective motivators for many academics, including those loosely termed 'traditional'.

Reilly and Brown (2008) suggested employees were more likely to be motivated by the implementation of a rewards strategy if they were directly involved in devising it and that there was a clear understanding of the implications on their work and social life as a result. Researchers such as Pfeffer (1998b) and Purcell et al. (2003) also commented on the association between high-performing organisations and the provision of a positive workplace climate in which employees voluntarily commit to the overall objectives – a psychological contract between the employee and employer. Guest (2004) focused on the implications for impacting on the psychological contract, those mutual obligations and commitments that underpin the relationship between employer and employee, that reward strategies might bring. Perkins and White (ibid) noted the need to ensure that reward strategies do not damage that psychological contract by focusing too overtly on specific tasks leading to reward (mirroring Frey's (1997) concerns of the 'crowding-out' effect). Where possible, the R&IS was

designed so that it not only supported specifically KT activities but a broader range of academic interests across the total portfolio of research, teaching and learning and KT.

D'Este and Perkmann (ibid, p.321) identified two distinct groups of academics: those strongly supportive of a "utility maximising commercialisation" and those driven to engage in collaborations to support their research objectives. Engagement in the varying forms of KT interactions was motivated by these different positions: those motivated by commercialisation were far more likely to engage in spin-off, licensing and patenting than those interested in a more collaborative venture through consulting, collaborative research and other forms of relationships. Similar to Lam (ibid), D' Este and Perkmann (ibid) urge policy makers to be cautious about using commercially-based incentives to engage academics in KT. Their research (ibid, p.332) showed that a large percentage of academics were not motivated by individual pecuniary gain and that appealing to opportunities to enhance research outputs was more likely to be successful:

"Most – but not all academics are motivated by finding solutions to interesting problems rather than pursuing economic opportunities."

4.1.3 Leadership and implementation

The successful implementation of any new policy was dependent on leadership within the organisation (Ulrich, 1998) and line managers were the key to the successful implementation of a reward strategy, particularly given the trend for HR issues and responsibility to be devolved (Armstrong and Brown, 2006). This was the case at MU, where significant responsibility had been devolved throughout the line management structure, with HR providing Business Partners as support. New policies and procedures will not in themselves impact on performance or behaviour, no matter how well conceived. As noted by Purcell et al. (2003), the success of a policy initiative in any process was dependent on the role of line managers. Aware of these implementation issues, I ensured that all levels of management within H&E were aware of the new R&IS and the procedures and processes involved. The Scheme was introduced and discussed at H&E leadership teams and within the RKTC. The involvement of H&E participants in the development of the R&IS through AR, with the nature of the bidding process within Departments for the incentives fund, ensured line managers were engaged.

Bushardt et al. (2011) noted that organisational cultural issues generally predominate over any rewards structure in terms of motivation to perform. If the organisational culture was weak

then it was unlikely that any rewards scheme would have significant impact. However, if strong then it is possible that, combined with an appropriate reward structure, improved performance could be managed. But rather like Schein (1992), Bushardt et al. (ibid, p.67) noted, “the primary job of a manager is to manage the culture, not the individual”. The AR process, with its ability to be transformational in terms of participant engagement, helped influence that culture to be supportive of the organisation’s wider KT objectives.

4.1.4 Engaging and embedding the R&IS

In meeting overall research objectives, enhancing the involvement or engagement of academics with KT has been stressed. Engagement is a rather loose term, reflecting an employee’s motivation, commitment and attachment to the organisation’s objectives. Macey et al. (2009) noted that engagement related to an individual’s focused energy, applied to organisational objectives involving personal initiative, effort and persistence. Engagement is related to an employee’s passion and dedication in their work but focused on organisational objectives. Importantly, if employee engagement is to be maximised, employees need to have a positive attitude to the organisational objectives. As noted by Egan (2008) and Lok et al. (2005), cultures of organisations, and in particular sub-cultures, have a significant impact on how an individual shows commitment. My own experience would question any assumption that successful engagement can be defined across the whole organisation. Some academics can be highly engaged within a specific part (or unit) of the overall structure (e.g. a School, Department, research centre, etc). One would assume that those discipline and Departmental objectives would coalesce with those of the corporate whole, however, the highly independent nature of an academic’s status within a university (as noted by Brown, ibid; Handy, ibid), may result in a high-achieving academic not necessarily identifying with corporate objectives. Indeed, in my experience, many academics are often highly cynical of corporate strategy and objectives. This would suggest that definitions of engagement should be extended to allow for the impact of sub-culture.

A total reward package allows for both intrinsic and extrinsic motivators, including both financial and non-financial rewards, built on a model that recognises the value of effective management, leadership and development with appropriate rewards structures (career progression, performance pay, recognition, etc) (Reilly and Brown, ibid). Managing these two dimensions can have direct positive impacts on performance, as employees will be more satisfied, feel there are involved in decision-making and recognised for their input, and might identify better with the goals of the organisation. Whilst Reilly and Brown (ibid) favoured a

total rewards approach, they also recognised that there may need to be segmentation of those rewards to take into account the varying needs of different types of employees and different employment circumstances. The R&IS developed for H&E allowed for this variance of approach. As part of the incentives element of the package, Departments were able to orientate the expenditure of their reward budgets according to their own strategic needs. But a key part of the process was how the R&IS could have the most effective impact within H&E and offer the opportunity for academics to engage with it. The nature of how the R&IS was embedded within H&E to ensure that academics could take up its opportunities stood out as a key issue for Cycle 3, due to the need to manage the process of rewards scheme development (Armstrong, *ibid*; Brown, *ibid*).

4.1.5 Research aims for Cycle 3

Emerging from this literature review, my on-going tacit knowledge development and the continued input of colleagues, building on the outcomes of Cycle 2, I determined that the key research aim was to establish:

“How could the R&IS be embedded in H&E so as to motivate academic colleagues to utilise it and, as a consequence, become engaged with KT or enhance that engagement?”

Learning in Action – Constructing

This section primarily reflects on key issues established from constructing and the inductive nature of the research.

Experiencing

I was able more fully to explore the background literature on motivation of academics to engaging in KT and the potential issues to reflect on in the research. I continued to find an interesting dynamic through entering the research process through a practice route rather than a solely theoretical one. My focus on rewards and incentives had arisen partly through previous published research on enhancing engagement with KT, but largely as I constructed meaning that emerged from the research data. This led me into a new subject area with varying theoretical perspectives and it could often feel as if one was catching-up with the theory after the event. I was of the opinion that the most appropriate research approach to establish the motivation of individuals to engage with the R&IS might be different from that which I might use to assess how embedded the scheme had become.

Understanding

In terms of undertaking the AR and to focus on the 'action' of embedding the R&IS more effectively, it was clear that motivational aspects had to be considered in parallel.

I summarised that it was common in practice-based research for theory and meaning to emerge as part of the process. In this respect, I found that the research was inductive in nature, developing and being revised as new information emerged.

Judging

I was conscious of the need to maintain a focus on the research 'actions' as part of AR and operationalising these, whilst being aware of emergent areas requiring theoretical understanding. The concepts within literature pertaining to rewards was novel to me. As the research evolved, and following my discussions with AR researchers, I felt there needed to be more participative approaches to the embedding of the R&IS. Developing an Action Research Group would allow for participation in future iterations and implementation of the R&IS and could support the sustainability of the initiative.

Acting

As a developing Action Researcher, this focus on action was an important learning experience as part of the DBA. Learning to manage the progress of a research project in a dynamic and fluid environment, where practice influences emerging theory and vice versa, was a significant personal development milestone. I had determined that the research of Cycle 3 needed to consider individual motivational aspects and a more participative approach to embedding the R&IS.

4.2 Planning

The chosen method of inquiry needed to provide appropriate data that addressed the substance of the research aim. The inquiry methodology for Cycle 3 needed to address both individual motivation and the process of embedding the R&IS, seeking opportunities for building-in enhanced participatory approaches.

4.2.1 Understanding individual motivation to engage with the R&IS

Due to the nature of the R&IS developed within Cycle 2, each of the five Departments within H&E at that time (Psychology, London Sports Institute, Mental Health Social Work and Interprofessional Health, Education, and Adult, Child and Midwifery) was expected to have undertaken an open bidding process for the allocated budgets available, based on past performance. Each Department was further expected to have in place fair, equitable and transparent arrangements for the selection of bids. Significant flexibility was inbuilt, allowing individual groups to invest in priority areas of strategic importance and relevance to their disciplines. Involvement in the decision-making process on how rewards were allocated, and the opportunity for flexibility of approach, were significant findings from the Cycle 2 research actions. Given a critical organisational issue was to assess the success of the R&IS, a key factor was to understand the motivation academic colleagues had for applying for funds and, conversely, why others did not feel motivated to apply. In addition to the Departmental bidding process, I wished to assess motivational aspects of the availability of individual payments as part of the R&IS. A survey questionnaire might well have provided useful data and would have brought advantages to participants of ease of access, reduced time commitment and quantitative analysis potential etc. Alternatively, using ethnographical approaches, observers could have been immersed within academic groups to gain insights into the motivational impact of the R&IS. Focus groups (or similar) could have been run with selected academics who had been awarded or not awarded funding. All would provide useful data, but there was a need to ensure that the method of inquiry was able to focus on the individual academic's motivation aspects. To ensure the views of individuals were captured I decided the most appropriate method of inquiry would be to use individual interviews for this aspect of the research. An additional benefit of this approach was its consistency with the methods used for Cycle 2, thus, enabling me to extend my experience in the techniques and related analysis and interpretation approaches for interviews.

The use of interviews as a method of inquiry was explored in some depth as part of Cycle 2 within this submission. As noted in section 3.2, within qualitative research, whilst some statistical approaches can be used, sampling tends to be 'purposive' – selected in a strategic way so that it represents the needs of the research question (Bryman, 2012). The sample was in some ways a mixture of critical, criterion, opportunistic and typical cases (using Bryman's summary from Appendix 10). It would have been useful, given suggested discipline-related variability in engagement with KT, to consider the motivation to apply for the R&I funding across all Departments equally. However, there would have been variation as larger Departments with greater previous KT activity and return allowance history would have had more successful bids. In addition, some Departments such as Mental Health, Social Work and Interprofessional Health (MH, SW& IPH) had far more variation in academic disciplines. Thus, purposive sampling was appropriate.

An important limitation was the resources needed to investigate the research aims, both for those involved within the Departments and myself. Overall, this indicated a need to ensure that those Departments with larger R&IS allowances, more diverse academic disciplines and greater levels of KT activity were allocated a greater number of interviews. It was appropriate within the purposive sampling to try to include both participants who had or had not bid for funds within the R&IS, helping to reduce selection bias, yet sampling needed to reflect participants with knowledge of engagement with the R&IS. Therefore, I determined to undertake interviews as follows (where B refers to those who had bid for R&IS funds and NB where they had not):

- MH,SW &IPH – three interviews (two B, one NB)
- Acute Child Midwifery– three interviews (two B, one NB)
- Psychology – two interviews (one B, one NB)
- Education – two interviews (one B, one NB)
- London Sport Institute (LSI) – two interviews – (one B, one NB)

(i.e. a proposed 12 interviews in total)

It would have been helpful to have been able to sample from academics who had received additional personal payments, as they may have been motivated by extrinsic factors. Unfortunately, it was difficult to plan for such interviews as these opportunities occurred as a result of ad hoc opportunities and were unknown in advance.

4.2.2 Embedding the R&IS effectively and group motivation to be engaged – use of an AR Group (ARG)

Embedding the R&IS involved understanding how it had been implemented within H&E and relevant groups' engagement with it. As Chair of RKTC, I had sought advice and guidance from this group as to how the R&IS could be appropriately promoted, implemented and supported. I had used the School's Senior Leadership Team (SLT) to ensure the R&IS was well-promoted and the appropriate processes followed within Departments. In addition, whilst the personal interviews would give individual reflections on motivation to engage with the R&IS, the formation of an ARG gave the opportunity to seek a group view on this aspect.

I was mindful, as outlined in Appendix 2, that a number of AR protagonists would expect a significant participatory element in the research. This issue is considered further at a meta-level in Chapter 6, but my reflection at this point in the research had suggested the need to allow for a more independent review to support appropriate ethical practices (Gelling and Munn-Giddings, 2011). As such, this element of the research in Cycle 3 was undertaken within an ARG. This assisted me with direct participative support in the action of embedding the R&IS and in providing me with a critical friend (the ARG) in the research. The ARG approach helped to address concerns regarding bias as an insider-researcher as the theoretical perspectives and meaning were derived through a more participatory approach.

A review of the nature of some key group interventions and techniques is provided in Appendix 37. Each of the group decision techniques has its virtues, but the nature of the Nominal Group Technique (NGT) best suited the academic community within H&E and the research aims. This approach enabled individuals within the group to have time to contemplate their views on an issue before discussion with their contemporaries. In my opinion this format was more closely aligned to the AR process, as actions were derived through consensual research outcomes within the group. Formation of such groups can be complex (membership, numbers, backgrounds and frequency of meetings). Ultimately, as Robson (2011) and Bryman (*ibid*) suggested, the needs of the research determine membership. For an effective working group Robson (*ibid*) suggested a maximum of 6–12 participants and Bryman (*ibid*) 6–10, but these were mostly recommendations for focus groups, which have a different mode of operation and purpose. Bryman (*ibid*) suggested that smaller groups were more useful for a controversial topic, or where it was important to obtain an in-depth response from key participants. The focus group participants should be reflective of the target

population within appropriate sampling guidelines. Large groups also result in logistical issues and challenges for the facilitator in ensuring contribution from all members.

The sampling regime selected thus took into account the needs of the research. One might have attempted a form of stratified sample, but I judged it more important to ensure that members of the group were in a position to contribute to the topic. Bryman (ibid) highlighted a number of studies that have 'purposively' chosen specific participants with information valuable to the research. In this case, a distinction was made between those who had previously secured funds under the R&IS and those who had not. This enabled more balanced viewpoints from a broader range of colleagues. Groups can be homogenous (individuals drawn from similar backgrounds, positions or experience) or heterogeneous (individuals from different backgrounds). Robson (ibid) noted the advantages and disadvantages of both:

- homogenous: facilitate communication, promote an exchange of ideas and experiences, give a sense of safety in expressing challenging areas, may result in 'group think' (similarity of position or views)
- heterogeneous: stimulate and enrich discussion, inspire other group members to look at topics in a different light, risk power imbalances, can lead to lack of respect for other opinions, can lead to dominance of one participant.

Due to the nature of the thesis, embedding of the R&IS involved participants from only H&E. Future research might focus on participation from other parts of the university rather than this largely homogenous group. The choice of membership of these groups was important not only in terms of representation of the various academics within H&E but to ensure the dynamics of the group allowed for collaborative work towards actions. Of particular importance in terms of group dynamics were the communication processes and interaction patterns between members (Toseland, Jones and Gellis, 2004).

The facilitator has a significant impact on whether a group might be successful, influencing group cohesion, levels of participation by individuals and whether groups are truly participative or predominantly facilitator led. The Director of Learning and Teaching at MU kindly agreed to facilitate the ARG sessions. In consultation with her, it was agreed that the maximum number for an effective ARG based on NGT was 12 participants. Where possible, and depending on volunteers, an attempt was made to ensure these were representative of the disciplines within Departments and characteristics of age, sex, ethnicity, length of service and grade. An e-mail letter was sent to School academic staff on 20th December 2013 inviting

participation in either personal interviews or the ARG, allowing the identification of those who had applied previously for the R&IS funds and those that had not or had been unsuccessful. The letter provided an outline of the purpose of the research and was explicitly stated that colleagues had the choice of whether or not to be involved (Appendix 38a and 38b).

Some 74 positive responses were received, of which 35 were from participants who were prepared to be involved in either interviews or the ARG, 8 specifically only in the ARGs and 31 specifically in interviews. Although detailed information about the character of these participant volunteers was not requested, it was possible to ascertain academic grade, length of service and Department/discipline. Appendix 39 provides a detailed record of those volunteering to be participants.

Learning in Action – Planning I interviews

Issues related to purposive sampling and use of an interview guide are reflected upon here.

Experience

I found that the use of purposive sampling continued to be a challenge, given my background. As the construct of the personal interviews developed, I became concerned that a truly open style as a desired outcome action from Cycle 2 would not best achieve the research aims.

Despite significant planning, during a preparatory first personal interview it became clear that the interview guide, as a research instrument, was deficient. It presupposed that participants knew about KT and the R&IS in some detail, which was not the case.

Understanding

I continued to improve my understanding of the use of purposive sampling and how this could be applied in an AR project of this nature. To evaluate the impact on motivation of the R&IS, using open style questions risked raising unaddressed issues. Once again, I overestimated the level of knowledge of KT and the R&IS amongst participants.

Judging

The high response rate to the call for volunteers enabled me to gain some representativeness in terms of Departments, grades and a selection of those who were R&IS funded and those who were not. It was more appropriate to use semi-structured approaches to meet the research aims. I then intended to ensure that my concerns raised in Cycle 2 could be addressed in the analysis part of Cycle 3 within NVivo. I reviewed the interview questions to ensure they were relevant for participants who might have had a range of knowledge regarding KT.

Acting

I was able to involve sufficient participants for a representative (but not stratified) sample to be created, and designed a semi-structured interview guide. I reviewed this and made substantial changes in order to focus more on the motivational impact of the R&IS, while allowing for escape routes for those with limited knowledge.

Learning in Action – Planning II ARG

This section reflects on the thinking leading to the nature of the ARG approach I selected.

Experiencing

I had identified the benefit of using a method of inquiry involving greater levels of participation as appropriate for some research aims of Cycle 3. Contemporaneously, I had discussions with my supervisor and external consultant on the degree of participation for this ARG project.

Developing the approaches to sampling raised some challenges, as I was attempting to identify appropriate volunteers for both this ARG and the personal interviews at the same time. A professorial colleague correctly questioned me as to whether it was appropriate to include colleagues who were not in post, prior to May 2013, as they would not have been subject to all the communications regarding the R&IS. This directed the sample. I also encountered challenges in including staff who had been paid individually for KT, as this work was far more ad hoc and not planned. A significant learning experience was to develop knowledge of approaches to group research.

Understanding

Having built a sound foundation on undertaking personal interviews I found it informative to research and develop a greater understanding of the use of group interview techniques and issues. Continuing with a constructivist paradigm position, I identified group interviews as appropriate to provide data relevant to the research aims. As has so often occurred in the research, a serendipitous comment led me to a range of decision-making approaches. I had been aware of Delphi, but had limited experience in other group interview decision-making techniques.

I was aware that there was a smaller pool of volunteer potential participants who had received personal payment. This created difficulties in deriving a sufficient sample for analysis. Including only staff in post before May 2013 was an important reminder for me to ensure the sampling focus was appropriate for the research aim.

Judging

I concluded that I would plan to involve enhanced participation in Cycle 3 but not as a fully participative ARG (as discussed fully in Chapter 6). These deliberations led me to formulate the methods of inquiry, including sampling and the development of an approach that included both individual interviews and group decision-making. Following consideration of alternatives, I decided that NGT held advantages in terms of the overall approach and its relevancy to ARG.

Acting

As a result of the constructing and planning stages, I determined that Cycle 3 methods of inquiry would be a combination of individual interviews and an ARG. The Director of Learning and Teaching, a practitioner of NGT, agreed to facilitate the ARG. I was interested in building on the work of the ARG an evaluation of the impact of the previous year's R&IS allocations. Augmenting this approach, I would use a number of interviews designed to explore more personal views on the impact of the R&IS on motivation to engage with KT. In line with the above, I only included staff employed prior to May 2013 in the sampling arrangements.

4.3 Taking action

This section describes the application of the methods of inquiry for the interviews and the ARG.

4.3.1 Interviews in method and practice

In accordance with the sample selection as referred to in Appendix 40, and modified to include only for participants in post by May 2013, personal interviews were undertaken between 7th February 2014 and 23rd April 2014, lasting 15–30mins, the majority no longer than 25mins. Details of the final breakdown of those interviewed and demographic data are provided in Appendix 41. It was intended to use an open interview approach to reduce the rigidity of NVivo analysis, however after further consideration and given the need to derive data on a number of key issues that might not be addressed by participants in an open format, a semi-structured interview was designed (see Appendix 42).

All interviews were undertaken in my office to allow suitable confidentiality. Exactly the same process for undertaking the interviews, recordings, storage and transcriptions was followed as for Cycle 2. As in Cycle 2, interview field notes were taken to note any particular issues (Appendix 43), temporarily taking over from my Research Journal. Similarly to Cycle 2, an external transcriber facilitated the transfer of the digitally recorded data to Word. The transcriber was recommended by a colleague from the Department of Psychology as having good skills in this area and, being a part-time PhD student, welcomed the opportunity. Issues in the use of an external transcriber were discussed for Cycle 2 (section 3.3.1). The transcriber was briefed in meetings and via e-mail and a specification provided (Appendix 44). I processed the transcriptions in exactly the same way as in Cycle 2.

4.3.2 ARG in method and practice

The first ARG was held on 12th February 2014. Of those selected and agreeing to attend, two failed to show up, reducing attendance to 14 as indicated in Appendix 45. The room was arranged so participants sat in a semi-circle for easy communication. Each was asked to introduce themselves and their academic position, as several did not know each other. I commenced by providing an overview of my research and an introduction to AR approaches, plus the development of the R&IS:

- reference was made to the consent forms that had been circulated previously and which contained a statement guaranteeing confidentiality and anonymity (Appendix 46) – the group was invited to be as frank and open in their views as possible
- it was expected that the ARG would be an enjoyable, participatory experience
- participants were asked to respect the confidentiality of each other's views
- the aim of the ARG was to result in 'actions' that would add value to the current R&IS and its utilisation and embedment within H&E
- participants were to note that I was attending as an observer and that confidentiality in the room could be trusted, with no fear of repercussions through my managerial role .

The use of an independent facilitator helped to address insider-researcher issues. She was familiar with the nature of NGT, which she modified to the objectives of the ARG, introducing its concepts and key steps involved, seeking agreement with the group that this would provide a basis for the actions that would arise.

I had determined two questions to put to the group: one focused on the relationship of motivation through the R&IS to undertake KT activities; and the other on the way in which H&E could better embed the R&IS).

First question

Either

In what ways will the R&IS motivate you to engage in KT activities, either as a result of the funding made available to Departments, or as an individual for personal payment.

OR

If it does not motivate you, note the reasons.

Second question

How could H&E better embed the R&IS into its work in order to enhance KT engagement and activity?

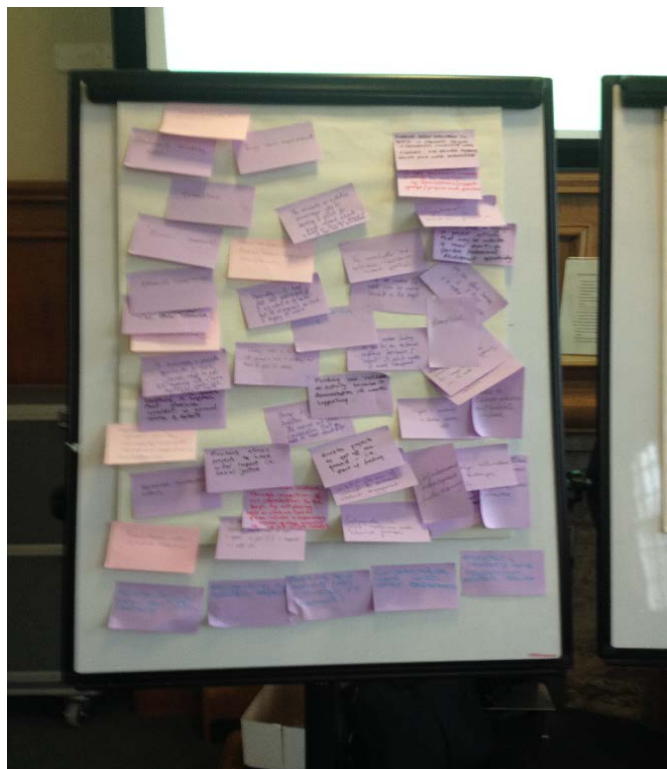
The original intention of the first question was to gain an understanding of the impact of the R&IS on this sample of participants, engaging them in a process (through the NGT) of clarifying and building on its motivational aspects. Due to the limited knowledge shown in Cycle 2, copies of the R&IS were distributed in advance. The question posed was designed to be forward thinking and action-based by introducing the auxiliary verb: 'in what ways *will* the R&IS' motivate you to engage in KT. This allowed those less familiar with the R&IS to contribute effectively. An additional question was also posed to allow those who had not been motivated to have a voice and to note down the reasons why not.

The facilitator clarified that all were satisfied with their understanding of the questions posed. Each participant was provided with a booklet of coloured post-it notes and asked, in silence, to write down as many thoughts they had about the two aspects of the first question – purple notes for the first part and green ones for the non-motivated responses – then to stick these to three flipcharts, one reserved for the non-motivated green notes (see Photograph 1 below)



Photograph 1 Applying initial thought notes to the board

Participants were allowed sufficient time to be satisfied that they had completed the task (see Photograph 2 for example of a complete board of notes).



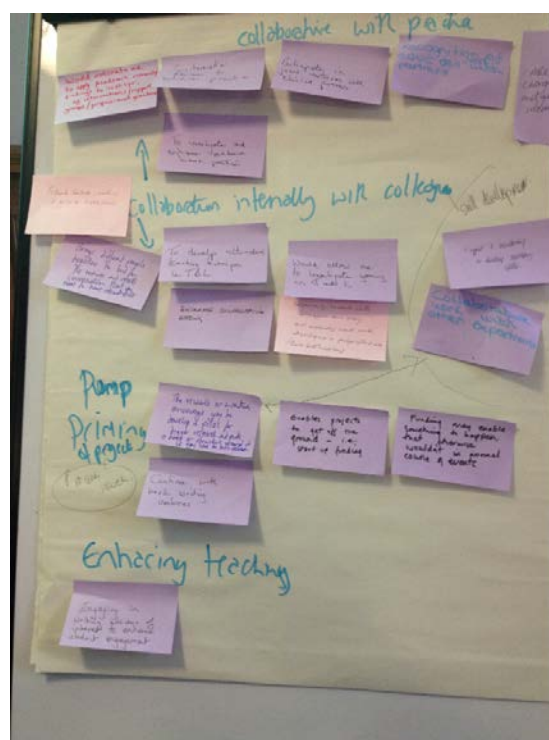
Photograph 2 A full board of notes

The facilitator then considered all the notes and, in discussion with participants, sorted the notes into common groupings (coded to categories). Participants were then asked to address the boards and, through discussion and agreement, to re-order the notes and confirm the categories. (See Photograph 3 for an example of one discussion group).



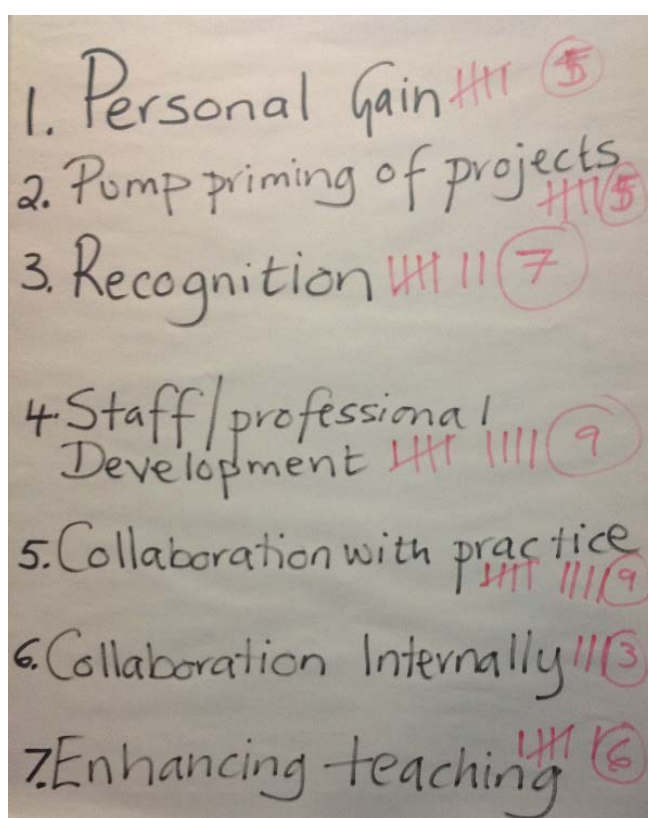
Photograph 3 Example of a group discussion

Unprompted, some participants began to form teams and eventually wrote on the flipcharts an agreed summary of each category (see Photograph 4).



Photograph 4 Example of 'categories' emerging

Once this process had been exhausted and agreement reached on categorisation, participants returned to their seats. Participants then completed a voting paper, required to rate their top three priorities. If they felt a category was more important than others to the question posed, they could offer two or all three votes to a particular category. These votes were then counted creating a ranking of the priority areas for action in terms of the key motivational issues for the R&IS that would enhance KT activity. Exactly the same process was then undertaken for the second main question, which asked participants to consider how the R&IS could be better embedded within H&E so as to enhance academic KT activity (See Photograph 5 – voting on embedding actions). This provided priority action categories through the votes from all participants. It can be noted that there was an error recorded by the facilitator in that this totals to 44 votes with a maximum of 42 available. It is my opinion that the confusion around the votes to ‘Personal Gain’ and ‘Pump priming of projects’ is responsible with each of these being 4 not 5 votes each.



Photograph 5 Voting on the second question for embedding actions

Learning in Action – Taking Action I: Interviews in practice

This section reflects new learning developed in Cycle 3 interviews, in particular the potential juxtaposition with the ARG.

Experiencing

Apart from one, all the interviews I undertook ran smoothly and elicited a significant amount of information. Whilst difficult to judge, it appeared to me that participants spoke freely and without concern for my position as a senior manager. The interview that was different involved a colleague who joined MU just over a year ago and whom I had not met before. For reasons unknown to me this colleague did not seem to want to engage with the interview process and gave very short answers, which were at times almost combative.

I found that additional information was often provided by participants once the microphones were off, as if that moment of relaxation after the interview allowed more personal thoughts to emerge. Although seldom adding significant material, I could judge that the process of recording of interviews clearly had an impact. Using my extensive coaching techniques helped to create a positive environment, the commitments to anonymity and confidentiality being critical. My specific research-related interview skills continued to improve over the investigative period. The disappointment to me was not being able to use a more open interview style. I viewed the use of a semi-structured approach to be necessary to ensure that key aspects were addressed. In addition, I believed there was some validity in the suggestion of using a similar approach as for Cycle 2 in terms of developing my own interview experience and practice.

Understanding

I noted that the semi-structured nature of the interview helped ensure a greater level of consistency. Listening to recordings, it was apparent to me that I used prompts to draw out emergent ideas to provide greater depth, but I still felt restricted by the choice of methods. Given the overlap in dates, the personal interviews could be used to augment the key actions derived from the ARG. In this way, I was able to dovetail the two approaches.

As the interviewer, I was aware that I was in a position of power, but I noted that the interviews became a discussion between colleagues and those interviewed became participants in the research, offering opinions and views in an open and positive fashion.

Judgement

As a developing researcher, I remain committed to experimenting with open interviews in the future. Semi-structured approaches can aid interpretation stages and, whilst generalisations cannot be made, may assist me in at least identifying common areas of interest to the wider research community. The semi-structured nature resulted in greater commonality for the main research questions, and the prompts allowed me to introduce more variation. I found the synchronisation of interviews and the ARG to be an interesting aspect. My aim was to run the two approaches separately and then compare and contrast the interviews, providing greater depth for personal issues that may not have emerged in an ARG situation such as around values and beliefs. The fact that the ARG was completed before I undertook the vast majority of the interviews might have had an interesting bearing on my own performance and nuances within the questions.

Acting

Overall, I feel that I was able effectively to use my interview experience as developed under Cycle 2. In terms of actions emerging from the interviews, many of these would be determined by the more detailed analysis to follow. I was determined to try to use the NVivo analysis process in a way that allowed themes to emerge, rather than necessarily being restricted by the main questions of the interview. I noted the interesting question posed about the interrelationship between the interviews and the ARG, which could be the subject of further research as part of another project.

Learning in Action – Taking Action II: The ARG in practice

This section reflects on the benefits of the NGT within an AR approach, the learning potential within such methods and on the nature of engagement within the ARG.

Experiencing

I found the ARG to be well supported and the atmosphere positive, with participants taking an active involvement. Despite this, and active engagement in contributing to the flipcharts, there was little debate once all were re-seated, the only real discussion point around the need for a better understanding of KT. Whilst I noted that the facilitation was excellent, it was perhaps difficult to create a more informal atmosphere with the numbers present. Initially, my interpretation was that the experience was akin to a formal seminar, and it became rapidly less formal as participants began to converse around their ideas at the flipcharts.

In retrospect I consider that my two posed questions proved too time-consuming and the ARG took too long, leading to participants clearly becoming tired. I had asked the ARG to focus on future developments, but many participants used the opportunity to look back at negative experiences, mostly unrelated to the questions. Once again, I noted the paucity of knowledge about the R&IS. It was my view that the NGT was an attractive approach for enabling a participative, more democratic process for AR.

Understanding

I noted that the varied nature and positions of the participant group may have initially caused some barriers to discussion. Privately, a younger academic expressed concerns about contributing in the presence of senior, more experienced academics. I advised that her views would be as valued as any other participant and she seemed satisfied. However, it could be that others were feeling conscious of this situation. There were more female participants present, reflective of the School academic staffing profile, but I was not aware of any sex characteristics creating barriers to contribution or any undue influence over the results. Certain cultures are less inclined to participate in group interviews and focus groups. This was effectively demonstrated in the work of Lee and Lee (2009), who considered the reticence of certain Asian cultures to group work activities. This research (ibid) demonstrated how the focus on verbal social interactions was a more common trait amongst certain cultures, for example in Western Europe and North America, than it was in others such as in East Asia. The level of activity and discussion of participants by the flipcharts suggested a high level of active engagement. However, I noted two individuals who contributed notes but chose not to be involved in any of the discussions.

Following the experience of Fox (1998) I had sent around the R&IS in advance of the ARG for participants to remind themselves of the key points, but few seemed to have read it. I would concur with the findings of Fox (ibid) that an unprepared NGT can in some circumstances be disadvantageous. There was general agreement in the categories established by the group. However, I would suggest this was not fully democratic in that some category champions emerged.

Judging

I continued to note that knowledge and understanding of the R&IS and also of KT itself remains limited amongst some academic staff, but the learning potential of AR was demonstrable as the ARG allowed participants to enhance their knowledge as part of the process. The use of an independent facilitator had disadvantages due to a lack of knowledge of the subject matter. One example of this was the facilitator wrongly referring to the R&IS as the 'research and incentives scheme' on at least four occasions, which I had to correct.

The issue of rewards and incentives created a number of strong feelings and opinions. The NGT appeared to be an appropriate way of drawing out those opinions and then using the participants themselves to create key categories and priorities through a voting system. Fox (ibid) suggests that one can identify contributions to individuals which might restrict engagement. However, my view is that this level of 'identification' was lost in the mass of ideas placed on the boards. Initially when first ideas were placed on the board most participants were reluctant to engage but, as confidence levels grew, the boards rapidly filled. Passions came to the fore when one or two individuals moved post-it notes between different 'categories'. I also noted there appeared to be two or three instigators who appeared to want to control the boards. Interestingly, in my experience, these same colleagues showed this attribute in other environments such as in contributions to meetings. However, this did not dominate proceedings and it was clear that many participants were actively engaged in the categorisation process. The NGT approach led to categorisation of actions with little outward disagreement and the voting process allowed for individual reflection on the actions proposed.

Acting

I have identified key aspects of action specifically on this process to take forward to the future:

- * Using NGT was an effective way of enabling group decisions for a research question and promoted a joint learning experience. It provided a useful tool and process for assimilating ideas in a group context and promoting an equal voice for all. However, whether it was the size of the group, the mixture of different roles and consequent status, the use of a senior manager as a facilitator or my presence, the lack of debate and interaction outside of that around the flipchart boards was disappointing. In using NGT in the future, I would pay more attention to approaches to engage the group in such discussion and debate.
- * There is a need to ensure that I am clearer about the role of the participant as an active part of the research outcomes. Whilst I stated this in both the preliminary information about the research and at the meeting, it was not fully appreciated that the ARG would direct future practice and policy.
- * I would suggest that, should consent be obtained, the proceedings could be filmed allow tracking of participants' level of engagement with the flipcharts and discussions.
- * I intended that the ARG could assist in assessing the impact of the R&IS on academics and then to blend outcomes with suggestions that would emerge from participants on how to better embed the Scheme. In my opinion, a significant number of the notes taken and the categories that arose reflect more general commentary on the role of KT in academia. This led to the need for careful evaluation in order to focus on the impact of the R&IS specifically.

4.4 Evaluation I: Interviews

This section focuses on the evaluation aspects relevant to the personal interviews.

4.4.1 Themes emerging from the NVivo analysis

Similar techniques were used in the interpretation of the interviews with NVivo 10 as in Cycle 2. A difference in approach was to not apply the auto-coding function, where nodes develop around the questions of the semi-structured interview. This allowed coding themes to emerge from the transcripts (data) in a more free-form fashion. On-going reduction and coalescing of codes led to main nodes (or categories), each with related daughter nodes (11 core nodes, including 'Memorable Quotes', and 17 further daughter nodes, representing sub-categories within the main themes). Additionally, one daughter node created further sub-daughter nodes. Appendix 47 provides an outline of the node structure (nodes and sub-nodes) in a spreadsheet

together with information on how many sources were coded for each node, and how many references were noted for each node (one source may provide several per node). There is an additional node created as part of the analysis, termed 'Summary of Quotes'. Appendix 47 demonstrates that coding was undertaken contemporaneously with the interviews, following good practice. Coding was continued up until saturation, that is, few further new data emerged. Appendix 47 shows the range and variability of coding. Three daughter nodes were common to all participants ('Alternative Suggestions to Scheme'; 'Awareness of process'; and 'Motivators for academic work'), with 'Contracts and Employment' as a sub-node attracting two sources. The most references to a main node were to 'Awareness of bidding opportunity' (83r) and the least to 'other rewards and incentives scheme' (12r). Coding was derived from the transcript narratives, but the nature of the semi-structured interview, together with specific prompts, inevitably led to categories or themes forming around questions of the interview guide. One notable exception was 'Time', emerging as worthy of further categorisation and evaluation (NB Extraneous information provided by participants but irrelevant to the research was not coded).

Reviews of transcripts downloaded to NVivo demonstrated that most sections had been coded to at least one node. The broadness of the coding analysis is reflected in the two reports provided by NVivo in Appendices 48 and 49, 'Node Summary' and 'Code Summary by Source'. Additionally, within NVivo one can visually portray the relationship of a node to its sources via a Map-Graph, as provided for the node "Alternative Suggestions for Engaging Academics in KT" in Appendix 50.

4.4.2 Further detailed analysis by NVivo

NVivo allows for interrogation of data using various analysis tools or 'Queries'. Most commonly used are: 'text query' (for common links between words or 'phrases'); 'word frequency' (simply the most used words); or 'node query' (commonalities across and between nodes). Running these queries did not provide additional useful information. Examples are provided in Appendix 51 such as 'word frequency' as a 'Tag Cloud'. Many words related as much to the question as the responses and no particular themes emerged. The recurring themes of 'recognition' and 'time' were individually considered through the use of 'word trees' (Appendices 52 and Appendix 53). Relationships between the use of 'time' and contextual phrases were noted, but showed little of value. Analysis was considered of participants as 'clusters' of responses by words used through the 'Cluster Analysis' option. This showed no clear correlation between respondents, for example by academic position (See Appendix 54).

Whilst the limited number of interviews and the research approach do not lend themselves to generalisation, demographic data were collected (as in Cycle 2), including: Sex; length of academic service; academic role; ethnicity; and age.

Classified demographic data are provided within Appendix 41. Respondents to the interviews may be classified as follows:

- 73% female
- the majority (80%) being older than 40 years, with 53% above 50 years
- 80% of participants were at SL or above with one Professor
- all but one participant were of White ethnic origin

The NVivo query option allows a form of cross-tabulation of data sources (nodes) against these demographic descriptors. However, the limited size of the sample group and limitations of the demographic data suggested that cross-tabulation would have limited value. Some examples of the interpretation of data by such means are shown in the themes emerging below.

4.4.3 Using memos to identify threads and themes

Given the limitations of the NVivo query function, the memo function was used as in Cycle 2. A memo was commenced for each parent node or sub-node as appropriate, once saturation of coding had been reached. The key issues raised within each node were recorded and, when summarised, themes emerged in developing actions relevant to motivational aspects and embedding the R&IS. Memos created can be seen in Appendix 55, 'Cycle 3 memos created'. An example of the content of a memo can be found at Appendix 56, 'Cycle 3 Example of memo. Embedding the Scheme more effectively'. For each node, the key issues and actions that emerged were noted together with the number of sources (s) and references (r). This detailed evaluation can be found in Appendix 57 with a summary of derived actions below, accompanied by illustrative quotes.

Awareness of KT

NVivo Matrix coding would suggest that responses to this node were predominantly from PL grades and from those with a longer length of service (Appendix 58). This would correlate with the research in Cycle 2, which demonstrated a similar result.

- seek approaches to raise awareness and understanding of KT and to re-energise previous successful campaigns:

"No I don't think I've got a detailed um underst– knowledge... quite a nebulous term I wish I'd always known whether something was KT or not." (140217.001)

Awareness of opportunities to bid for funds

- use a variety of approaches to build awareness and understanding of the R&IS. Key here were the activities of HoDs and senior researchers in each Department:

"yes I have been made aware of the opportunities to bid locally in the in the department last year and this year." (140310.001)

"at departmental level we've had we've had several rounds actually of um bidding um in the nearly two years I've been here um and actually I've been successful with it so yes I am aware of it." (140408.001)

- focus on the key routes of information within each Department to enhance message delivery:

"well I suppose the most effective way is via email although I like word of mouth because then you can chat about it find out whether or not how you would do it what you would do I think there's a risk in email that an email comes out and you think ooh I can't do that it's not going to work." (140317.001)

- appoint a clear lead or champion within the Department for both KT and processing the R&IS
- whilst trying to retain some element of flexibility, codify the process for allocation of funds more effectively:

"the structure of it hasn't been very clear." (140224.001)

"there was incentive money but that was always the detail to me for another reason, um not necessarily that's the same thing that's not the I haven't been given that detail on this could be used to develop a KT opportunity." (140311.001)

- retain a structure for decision-making of the funding so that it is open and transparent but reduces bureaucracy
- focus the process on ECRs.

Awareness of the R&IS

The majority of sources were from SLs and PLs:

"I think that I think that is actually I think that's quite well understood I think not just by me but generally in the department." (140226.001)

"very vaguely that's the honest answer." (140217.001)

- focus primarily on the opportunity to bid awareness rather than necessarily a specific knowledge of the R&IS
- more focus and engagement on the opportunity for individuals to benefit through the R&IS.

Motivational aspects of the R&IS

A matrix coding query shows that the most positive responses to applying in the future for R&IS came from the SLs. (Appendix 59, Cycle 3 'Motivation to apply by position and length of service'):

"I would definitely apply again in the future" (140302.001)

- focus the R&IS on ECRs but, in addition, on those academics building their careers but having progressed already beyond an ECR stage
- recognise more effectively how the process of seeking R&IS funds develops skills relevant to other areas (bidding for the research funds, project management skills etc.) – as there is an important self-development aspect to engaging with the R&IS
- provide more effective examples of how the R&IS can be utilised, e.g. for teaching buy-out for research:

"to have maybe some of those projects presented and how they went about it might be useful." (140318.001)

- provide more effective information on how individuals can benefit personally:

"I think I've missed that completely well I think yes obviously it would make a it wouldn't make any difference to me personally but I think it would make a difference to people generically because they would some people don't want to work as part of a team some people want to work for individual gains." (1403017.001)

- maintain the flexibility to support a broad range of projects:

"I think the flexibility is important." (140217.001)

- consider establishing a bank of academic staff who can be used to undertake KT activities.

Other rewards and incentives schemes

- Ensure that there is recognition within H&E of how the R&IS has been used effectively
- recognise that providing time is a significant reward perhaps to enable individual research profiling to be enhanced
- ensure rewards are meaningful and related to success in meeting outcomes.

Performance related returns

- Ensure it is clear and transparent how performance relates to rewards
- avoid describing performance related returns/rewards in commercial terms:

"I suppose it would be ah I just find the whole thing quite uncomfortable it smacks of um sales and ad- you know cold calling and just makes me uncomfortable." (140217.001)

- build-on recognition through the R&IS as an attractive selling-point:

"on balance um I like it because it recognises that people you know it it kind of it's one way of giving people some recognition of the extra miles that they go." (40220.001)

- allow for group and individual reward/incentive within the R&IS.

Embedding the R&IS more effectively

- Staff should be reminded about the R&IS to maintain awareness and to engage new staff unfamiliar with it
- provide case studies and examples of how the funds have been utilised:

"I do think some examples of how it has worked and how it can work but also what the benefit is to the individual" (140227.001)

- choose appropriate language in the R&IS and its promotion as academics find the (commercial) language of KT off-putting

- sufficient time allocations for KT work need to be provided, including making awards in a timely manner to enable expenditure within year
- ensure greater consistency of approach in terms of the way the R&IS is introduced within Departments:

"I think having some specific fundamental um guidelines um that is consistent across the school across departments um have them whether available or easily accessible." (140224.001)

- maximise opportunities within Work Programmes planning and appraisals for engaging with KT.

Motivation for academic work

- Recognise more effectively that the nature of KT work was rewarding and viewed to be of value. It was important for the academic to feel they were doing a "good job":

"motivation to do a job well umm in teaching and education there's you're never satisfied so you could always do something better" (140212.001)

- build-on the desire for academics to 'make a difference' in society:

"so there was that feeling of like you know not changing the world but trying to make it a slightly better place so I think that's the main that's the main impetus." (140408.001)

- appeal to academic curiosity and passion for the discipline as elements of KT:

"I can do a piece of work which is for me is really interesting and I think is going to be really really useful that that that's the reward for me." (140304.001)

- use KT as a route to developing and enhancing collaborative partnerships/networks and for demonstrating the value of the discipline areas to external stakeholders:

"maintain those networks and partnerships." (140212.001)

- recognise more effectively the motivation value of being 'recognised', by their peers and also through some form of reward. Some were attracted by extrinsic, pecuniary/promotion rewards but there was a stronger desire for simple recognition by managers of successful outcomes:

"I think lots of people are motivated by somebody senior to them making them aware that their work is appreciated I think a lot's of people are motivated by that." (140212.001)

- highlight how undertaking KT was an opportunity for a more rounded academic experience.

Engaging academics in KT more

- Utilise non-business language or non-KT-related jargon when trying to engage academics in KT:

"I suppose I found some of the language a bit off-putting as (laughing) you can probably gather I'm not sort of happy with marketing stuff so again I think sometimes it's about explaining what it is so that you then can hook an academic in who will say oh yeah I am actually really interested." (140217.001)

- explore more effective support from University services in particular the RKTO
- provide more support to academics in a variety of forms:
 - mentorship and coaching where appropriate
 - peer support groups akin to 'research clubs'
 - provision of more time in Work Programmes to facilitate KT:

"I'm getting at the moment very limited support" (140224.001)

- provide specific KT related staff development, in particular the tools needed to facilitate KT developments
- continue to enhance the reputation and recognition of KT activities within MU.

Time emerging as an issue

The NVivo matrix coding in Appendix 60 (Cycle 3, 'Time as an issue by position and length of service') shows the majority of references were from PLs. It may be an issue of more relevance at that grade, but this is not conclusive:

- ensure that KT, and implementation of R&IS projects, are integrated in individuals' WP
- that as a management team H&E continues to recognise KT as valued academic activity
- utilise the opportunity to buy-out or buy-in KT active staff thereby releasing time:

"I would be more motivated to have the reward as time." (140212.001)

4.4.4 Summary of key actions that arose from the interviews

Synthesising the outcomes from the interviews, largely focusing on motivation to engage with the R&IS, the following provides a summary of the key actions:

- use non-business language and avoid KT jargon when seeking to engage academics
- provide more support for academics in the form of:
 - effective and efficient central services
 - mentorship within the Departments, including appointment of a KT champion
 - specific staff development to understand how to effect KT but also through the opportunities arising with the R&IS
 - peer support from influential groups within the discipline and Department (e.g. the equivalent of research clubs)
- provide recognition in a variety of ways both for undertaking KT, the outcomes of that work and its profile within the organisation (see Armstrong and Brown, *ibid*: Lam, *ibid*)
- raise awareness of KT and the R&IS in a way that is relevant and pertinent, involving the use of case studies and other examples of successful outcomes
- ensure greater consistency in the R&IS bidding process across Departments with clearer documentation, less bureaucracy and transparent decision processes – flexibility with consistency
- promote both the project and individual related rewards opportunities within the R&IS (reward recognising the individual's contribution, see Armstrong, *ibid*)
- seek to release 'time' for academics to be more engaged in KT through work programming, buying-out of teaching and other means
- focus on the use of KT/R&IS to build collaborative partnerships within the School/University and externally

These actions should be undertaken within a set of values that recognises that:

- recognition does not have to be in the form of a financial incentive – many academics were intrinsically motivated to undertake KT
- making a difference in society is a motivator (as noted by Olmos Peñuela et al., 2013)
- KT should appeal to academic curiosity, the development of new knowledge and recognition of the passion for the discipline (Lam's 'Puzzle' motivator, *ibid*)

Learning in Action – Evaluation I Interviews

This section reflects on the experiences in evaluating the interviews without the use of autocoding in NVivo,

Experiencing

In contrast to Cycle 2, I chose not to use the autocoding function of NVivo for interpretation. However, despite my best intentions, the use of semi-structured interviews led to a form of autocoding as the categories that developed tended to be on the question themes. In addition, as in Cycle 2, I found the query functions in NVivo did not result in useful information. There were issues in terms of the authenticity of developing action themes from limited numbers of interviews, particularly in seeking to use representative quotes or cross-tabulations.

Understanding

I attempted to categorise directly up from transcripts rather than use autocoding, but use of an interview guide focused interpretation through NVivo to the main question themes even though I designed the guide to stimulate sufficient broadness of responses. Query functions were most useful when I looked for specific themes resulting from characteristics of the participants. However, participant confidentiality and the sample size limited the use of such functions.

Interviews allowed for in-depth investigation of the views held by participants. However, using NVivo perhaps gave an illusion of some form of broad quantitative systematic analysis, as the themes were often drawn from a limited number of respondents.

Judgement

My interpretation allowed for specific themes to emerge, but the set questions and prompts were influential. The node that developed around concerns about 'time' was notable as emerging from the interpretation. The literature referred to lack of time, as noted previously in this thesis, as a recurrent impediment to engagement with KT. My use of a consistent approach through the interview guide supported the development of coherent meanings, but a future personal objective would be to reduce the restrictions imposed by using an interview guide.

I re-confirmed with a leading exponent of NVivo at MU that I had applied the analysis tools appropriately.

Interviews have their limitations, yet I believe they offer an opportunity to gather a deeper understanding of a phenomenon and allow for enhanced levels of confidentiality, leading to openness. My interviews provided colour, texture and richness to the research and useful illustrative quotes to support the identified actions. Most themes reflected multiple views and the quotes I have chosen were from across the range of participants.

Acting

As in Cycle 2, my use of NVivo created a useful database of the interviews and allowed rapid thematic interpretation, augmented in my case through the memo facility. Whilst reading through the transcripts and listening to the recordings, I was able to use memos to create themes and sub-themes. Combined with appropriate quotes, memos could be drawn into the main thesis – a time-efficient interpretation approach. Personal time resources and ease aside, it would be tempting to use an open interview approach in the future and interpret with and without use of a software package, to compare and contrast.

As in Cycle 2, attempting to generalise from the interviews would not be appropriate but, aware of these limitations, I believe there are issues emerging that either validate the findings of others or that could be additional nuances that might be applicable in other circumstances. These are identified following the evaluation of the ARG below and carried forward to the meta-level discussions of Chapter 6.

4.5 Evaluation II: ARG

The evaluation of the ARG findings follows a common format for each question posed: a summary of the main categories that emerged, followed by the results of the voting.

4.5.1 First posed question – the R&IS as a motivator to engage in KT – categories and voting

The main categories and codings for the first question, ‘Reasons the R&IS does, or could, motivate academics to engage in KT’ are provided in Table 2:

Table 2 Summary of categories and codings in what ways will the R&IS be a motivator to engage in KT

Main categories (nodes)	Response post-it note comments (codings)
Personal gain	<ul style="list-style-type: none"> • liberation/change from must to do job constraints-respite care • reduced teaching hours • funding made to Department • opportunity for consultancy work • individual and personal payment • promotion • promotion (<i>editor note – was repeated as noted</i>) • bonus payment • recognising my personal specific expertise • monetary rewards and recognition across sector • funding available to departments strengthens the Department and encourages collective work • personal payment • funding made available to the Departments – a clear and transparent way of distributing resources • ability for department to have discretion around how money is spent
Recognition	<ul style="list-style-type: none"> • as a doctoral student through recognition of our contribution to the Department e.g. not placing limits on what we can do • it makes the work you do more visible in the Department • funding can ‘validate’ an activity because it demonstrates its worth • I am asked to do ‘extra’ but it is recognised, as such I enjoy it more
Staff/Professional development	<ul style="list-style-type: none"> • attend conferences • funding can enable specialist staff to support development • I can access funding to go to an external conference because I ‘earned’ it • teaching and learning bids • self enhancement and development, further training • chance to explore areas of personal/scholarly/professional interest and passion • enable staff to engage in project activity that may be outside of their remit-so provides professional development opportunity • it encourages or provides opportunities for more junior staff to get KT experience with a more experienced person when bidding for projects
Collaboration with practice	<ul style="list-style-type: none"> • motivates me to apply academic research/findings to ‘real life’ • systematic reviews to enhance practice • to investigate and enhance evidence-based practices • participate in joint ventures with clinical partners • funding allows projects to have wider impact i.e. social justice • recognition of education and development work with partners • able to change practice and generate income • expands contacts within and outside the institution

Collaboration internally with colleagues	<ul style="list-style-type: none"> • brings different people together to bid for the monies and starts conversations that you need to have about bids • to develop alternative teaching techniques i.e. TBL • encourages collaborative working • would allow me to investigate gaming in teaching and learning • opportunity work with colleagues one may not normally work with-developing a project activity (cross fertilisation) • support and mentorship to develop necessary skills • collaborative work with other departments
Pump-priming of projects	<ul style="list-style-type: none"> • the rewards and incentives encourage you to develop a pilot for bigger research and puts a time structure around it i.e. you have to bid and deliver • enables projects to get off the ground i.e. start-up funding • able to continue with book writing ventures • funding may enable something to happen that otherwise wouldn't in normal course of events
Enhancing teaching	<ul style="list-style-type: none"> • engaging in writing articles of interest to enhance student engagement • buying new equipment • we can afford luxuries i.e. iPads and it makes work easier.

To obtain a balance and to consider whether the R&IS did not act as motivation to engage in KT, participants were asked for their views as a subset of the first posed question. This did not generate the same level of activity, and the participants found it challenging to seek order or categorise. There were three themes, plus 'miscellaneous', as shown in Table 3:

Table 3 Summary of categories and codings where R&IS was not a motivator

Main categories (nodes)	Response post-it note comments (codings)
Inequity	<ul style="list-style-type: none"> I believe that opportunities for KT are not always in an individual's/Departmental control e.g. external NHS budgets. Therefore some individuals Departments may find it easier to provide KT than others. Therefore accessing the rewards and incentives scheme is inequitable lack of recognition if seen as 'just a student' – inequity
Time	<ul style="list-style-type: none"> time-given other priorities this may be lower/squeezed out need time-no amount of money will allow time extra work no time payment, but it comes as overtime
R&IS not a motivator	<ul style="list-style-type: none"> rewards beyond my salary are very marginal incentives don't motivate me, it is intrinsically motivating doing a good job with good feedback motivates me I do not necessarily require extra incentives for doing my job KT is something we ought to do as appropriate and is part of our role. You don't incentivise research and teaching
Other notes	<ul style="list-style-type: none"> some 'knowledge' is privileged over others (this would appear to be so) competing with colleagues rewards beyond my salary are tinged with guilt so go to the Department not feel included/understanding what to do lack of clarity and understanding about what KT is Department demand/priorities and not value the proposed activity red tape, systemic failures (you can get caught in loops; need ethics to plan project and money from project doesn't arrive until plans approved)

Participants agreed that the categorisation of notes was acceptable and decided to focus on those responses related to 'in what way will the R&IS be a motivator to engage in KT' (Table 2). Participants then voted for three priority areas, and were able to vote for a category more than once. The rank order of categories, together with the number of votes for each, is provided in Table 4:

**Table 4 Voting results for 1st posed question – where the R&IS will be a motivator to engage in KT
(note adjustment for error (in brackets) making no material difference to rankings)**

Ranking	Category	Votes
=1	Staff/professional development	9
=1	Collaboration with practice	9
3	Recognition	7
4	Enhancing teaching	6
=5	Personal gain	5 (4)
=5	Pump priming of projects	5 (4)
7	Collaboration internally	3

4.5.2 Second posed question – embedding the R&IS

Exactly the same process was followed for this question. Categories emerged directly from the participants with no further facilitation and are detailed in Table 5:

Table 5 Summary of categories and codings – Embedding the R&IS

Main categories (nodes)	Response post-it note comments (codings)
Sharing	<ul style="list-style-type: none"> • central forum, notice board for staff to share ideas and explore opportunities • newsletter • share information i.e. more mainstream activity • hold regular talks by people engaged in the R and I scheme/KT engagement and activity • through meetings/discussions with staff • have it as an item for discussion in programme meetings • more access to all • funding study days to explain KT engagement • supporting staff to understand the incentives • publish outcomes more visibly • publicise more • be more transparent about the priority of some KT over another • make the variety/types of rewards/incentives clear
Clarifying	<ul style="list-style-type: none"> • more information given to all • provide examples of how it is used/has been used • greater clarity about KT activity and its impact/value to university/others • disseminate in a clearer way using examples what KT and the rewards and incentives scheme is-maybe include some case studies as examples • clarify the process of accessing KT and the scheme • case studies • workshops which facilitate preparation for KT activities • raise awareness and therefore understanding of what it is in individual Departments

	<ul style="list-style-type: none"> • provide examples of rewards and incentives scheme
Building and developing/ enabling	<ul style="list-style-type: none"> • create a space for discussion about KT activities in individual Departments • foster opportunities for internal collaborations • supporting seminars/events with researchers at other institutions • host conferences etc. to bring people together around areas of interest/need • foster opportunities for external collaboration • joint appointments • more effective dissemination of previous KT endeavours and perhaps a road show or suchlike event • integrate KT more fully with REF for impact plan small pilot projects to seed interest/expectations • identify staff areas of interest to encourage others • identify staff expertise and strengths to maximise support frameworks • Lead for KT within each Department
Importance of linking 'academic practice	<ul style="list-style-type: none"> • emphasise that teaching, research and KT make the world a better place, and that is what universities are for • links between KT and teaching
Measuring and evaluating	<ul style="list-style-type: none"> • integral part of the appraisal discussions • part of appraisal system • part of appraisal/CPD • include discussion about applying rewards and incentives scheme in appraisals
Challenges	<ul style="list-style-type: none"> • be more inclusive • abandon the scheme and replace it with a scheme like teaching and research allocations • commission work streams rather than waiting for them to self-generate • issues around time • inclusion and ring-fencing of time within workload programmes • time allowances on Work Programmes

Participants were again asked to vote for their highest priorities using three votes which could be applied in any combination. The rank order of categories, together with the number of votes for each, is provided in Table 6:

Table 6 Voting results for 2nd posed question

Ranking	Category	Score
1	Clarifying	15
2	Building developing and enabling	11
3	Sharing	7
4	Challenges	5
5	Importance of linking "academic practice"	3
6	Measuring and evaluating	1

4.5.3 Evaluating the ARG actions – the role of the R&IS in motivating academics in KT

Similar themes emerged as from the Cycle 2 research. The strong focus on making a difference, self-development and potential for personal gain was reflected in the discussions. The conflict between receiving personal benefit and contributing to wider academic achievements was reflected in some responses. For example, a number of notes referred to the opportunity within the R&IS for financial gain as a motivator, but this was contradicted by other notes where engagement with KT was viewed as an integral part of the academic role. This complex relationship between intrinsic and extrinsic motivators was consistent with the literature discussed previously. Those that suggested correlations with motivation and extrinsic gain (D'Este and Perkmann, *ibid* (for commercial work); Jacobson et al., *ibid*; Debackere and Veugels, *ibid*, etc) and those that did not find such strong a correlation in all cases (Lam, *ibid*: Markman et al., *ibid*). My research adds vindication to the position that intrinsic factors were more dominant as motivators, but there were a significant proportion of academics that respond to extrinsic motivators. A response typifying this was, "I can access funds 'cos I've earned it".

In terms of the R&IS as a motivator, enhanced 'staff development' and 'collaboration with practice' were most significant, closely followed by 'recognition'. This might reflect anxieties at that time, with the new academic profile introduction and consequent assimilation to new role descriptors and salary bands. 'Collaboration with practice' popularity was likely to have been a reflection of the academic provision in H&E, where many courses led to professional registration and recognition. Most courses combined practice and theory and sourcing practice areas was extremely challenging (e.g. in Nursing and Midwifery, and in Education). Developing strong networks with practice was therefore critical. The resultant value of developing strong partnerships and joint ventures points to a desire to strengthen the business/practice impact of academic provision (as noted by D'Este and Perkmann, *ibid*: D'Este et al., *ibid*).

As found previously in this research, understanding of KT was limited, with responses potentially related to KT equally as to the R&IS. Given the synergies between KT and research it was interesting to see responses that reflected the impact of KT on teaching practice, perhaps not surprising since the nature of H&E's KT provision was predominantly CPD.

In the responses where the R&IS did not lead to motivation for engagement in KT, inequity of access and lack of time to be engaged emerged as issues. In terms of the latter this seemed to be a continuing issue for KT in the sector. Reflecting back to the Cycle 1 Survey, time (or the

lack of it) was a key factor reducing engagement with KT, mirroring the findings of Lockett et al. (2008).

The results of this ARG helped to focus future actions on how the R&IS could be used to motivate academics to engage in KT. The ARG is a sample of the population, but key messages emerged:

- the R&IS had been beneficial in terms of professional development (junior staff and ECRs in particular)
- the R&IS could be used to promote and prioritise collaboration with practice and support ongoing partnership development, concurring with motivational drivers from Cycle 2 where 'making a difference' was an important aspect
- the R&IS funding vindicated academics engaging with KT activity and could lead to personal recognition. 'Recognition' attracted few original notes, yet the ARG voting process prioritised this category, demonstrating that participants were re-prioritising their thinking as part of the process
- use of the R&IS to support enhancements to teaching capabilities was noted, e.g. to support new teaching IT software and hardware
- there was little correlation between the number of notes and the priority given to 'personal gain'. However, I believe the number indicated that it was correct to have included the opportunity for personal financial gain within the R&IS. A significant number of notes reflected opinions that the R&IS could lead to promotion, but it was unclear in what way
- collaboration within H&E and across disciplines was highlighted, an issue that the RKTC raised in reviewing the R&IS which had led in 2013/14 to an element within the R&IS to support interdepartmental activities through ring-fencing a part of the budget
- findings compared favourably with research in this field, e.g. D'Este and Perkmann (ibid). A notable difference was the role that incentives could have in 'pump-priming' research projects, which received only four votes. This might have reflected membership of the ARG and the nature of H&E which did not have an historical research pedigree. However, this was surprising given the corporate focus at that time within MU on research.

4.5.4 Evaluating the ARG action points – the embedding of the R&IS

Perhaps as participants were more familiar with the NGT after working on the first question, or that the 'embedding' question was of greater interest, responses to the second question were more directed to potential actions. There was significant overlap between categories, participants having noted on the flipcharts a number of actions that could have been in several. In particular there were themes around providing more information, generating awareness, disseminating within academic teams the nature of the R&IS, providing examples of successful use of the R&IS, and so on. Many of these issues overlap between categories (e.g. provision and dissemination of appropriate information about the R&IS occurs in categories of 'Sharing', 'Clarifying' and 'Building, Developing and Enabling').

Although few post-it notes were originally allocated to 'challenges', the voting system elevated the issue, in particular, time management to undertake KT work and recognition within Work Programmes. One of the participants suggested abandoning the R&IS and replacing it with the need for KT within Work Programme planning. This view was an anomaly, as all other comments appeared to be positive suggestions for future action within the R&IS and one could posit that this may have been a personal issue about work programming. All Departments had the opportunity to build in Work Programme allowances for KT, but an issue may well have been that of competing priorities with heavy teaching loads and the desire to improve research profiles. Apart from 'dissemination of information about the Scheme', the need for better publicity and promotion was of significance. There was an underlying issue around accessibility, equity of opportunity and inclusiveness. Whilst the R&IS stressed these as fundamental elements, the ARG actions suggested that further work was needed in future iterations to establish these principles more actively.

Many of the post-it note responses had merit as actions in themselves. However, in order to be realistic within the resources available, and to schedule these in an appropriate fashion, potential actions were synthesised to the following areas:

- Publicity and dissemination of information about the R&IS. It is clear that the normal management structures and means of communication (leadership team, e-mails, meeting etc.) had not been effective. Initial ideas included:
 - developing a bulletin containing information about how the R&IS has been used to stimulate research, teaching and learning, and further KT
 - for me, as Deputy Dean, to attend Departmental 'away days' to discuss the R&IS

- providing a symposium to highlight previous examples of the uses of the R&IS
- including for R&IS case studies as part of MU's web transformation project
- raising the profile of the R&IS at whole School away days
- in conjunction with MU's RKTO staff, provide workshops run within the School primarily to further encourage a broader understanding of KT and the R&IS.

These would provide greater clarification and sharing of both information and good practice.

- A database of projects funded by the R&IS should be created for 2014/15 awards
- the R&IS contained many of the attributes that the participants wish to see (openness, equity, inclusion, etc), yet there was a need for these items to be more clearly stated
- building, enhancing and enabling academic staff to take advantage of the R&IS:
 - internal collaboration – a key motivator under 'building capability'. The R&IS allowed for interdepartmental bidding for a separate allowance, but responses in 13/14 were poor. Improved promotion was needed
 - there was a lack of guidance and project specific support. As administrative support had been centralised, and with the demise of the specific senior management position of Associate Dean Business, there was less resource and focus on KT than had been the case. Discussions following voting highlighted the role of mentorship. There was a mentorship scheme related to research objectives and it would be appropriate to ensure that this encompassed KT as part of the academic portfolio. A specific need in this category was for a "lead for KT in each Department"
 - There was a lack of consistency in how KT was accommodated within Work Programme planning across Departments. Requests for KT allowances were rarely made. This was an issue which would need to be addressed over a number of academic yearly cycles in terms of workforce planning
 - Linked to above, annual appraisals needed to reflect KT activities better.

In summary, the ARG allowed reflection on motivational aspects of the R&IS and provided opportunities to review consequent actions to enhance KT engagement in two distinct areas:

1. A refocusing of the R&IS to be more reflective of the key motivators identified

This would include the nature of contextual statements as part of a review of the R&IS, in particular an emphasis on:

- the flexibility within the R&IS allowing Departments to make investment choices
- staff development and collaboration with practice opportunities
- 'recognition' being more explicit. It would be clarified that R&IS allowances were directly related to past performance and were, therefore, a direct consequence of recognition of success. There was also the opportunity under the R&IS for individuals to achieve financial recognition.

2. The implementation of the R&IS across H&E, its promotion, clarity of purpose and the need for firm management to provide consistency

The key issues that emerged from the ARG reflected issues of awareness, implementation and management of the R&IS within H&E. Actions around these issues appeared critical and it was noted that the ARG could be directly engaged in future planning and policy development.

Learning in Action – Evaluation II ARG

This section identifies key learning moments from the evaluation process used within the ARG.

Experiencing

I found that the process itself led to identified priority actions with limited need for extensive post-analysis and allowed a progressive, real-time experience for participants.

The final participant's voting did not correlate to the number of posts per category, and individual posts could have been in several categories. I also noted the unexpected prevalence of teaching and learning within many categories. The sheer volume of the number of actions identified raised queries as to what was actually achievable and over what timeframe. I also noted that participants' contributions related to issues current at the time of the ARG.

Understanding

The fact that voting did not correlate with number of posts did not seem to be a major issue. The potential for participants to re-evaluate their own contributions was a key part of the NGT approach. Participants could debate further the consequences of the voting system and direct resultant actions. The NGT process sought agreement as to the final categorisation of posts placed on the flipcharts. The facilitator continuously sought agreement on the development of categories and I noted no verbal disagreement. This period of active review within the group was a significant benefit of NGT for AR.

The dominance of teaching and learning within the posts was perhaps reflective of a less research-intensive School and may have been due to the presence of academics providing vocational, professionally recognised courses. The use of individual posts as part of analysis (almost like quotes) might be criticised as unrepresentative of all posts in a category. Inevitably, management decisions would need to be made on priority actions with resources available and I noted that participants were concerned about job security at the time.

Judging

The lack of correlation between the number of posts and subsequent action category prioritisation was not significant, as the group discussed and agreed priority actions. I noted a certain amount of repetition in the posts to some categories (e.g. 'promotion' appeared on numerous occasions). There were occasions where posts occurred in different categories. The process allowed for ongoing group reflection but at some point decisions had to be made –

time constraints and categorisation saturation dictated this. This appeared to be consistent compared with other qualitative data gathering and categorisation approaches (such as Grounded Theory).

It was not surprising that priority actions linked to teaching and learning emerged, given the dominance of CPD in H&E's KT portfolio. I suggest this was distinctive to H&E at MU but may not be to similar Schools of other universities. In common with interviews, the use of contributions (posts) as quotations required care, since some would advocate this was poor practice in terms of representativeness of data. I understood this concern, however, it is common practice to use quotes to illustrate salient points arising from analysis of transcripts. In this research, I have included all post-it comments in the tables, so this is not an issue.

As both researcher and manager, I needed further support in implementing priority actions. Some actions were within my management remit, others required the agreement of other stakeholders. This could restrict how successfully some of the identified actions could be implemented. Academic staff were having to map themselves against new job roles at the time of the ARG, the purpose of which was to lead to a more balanced approach between teaching and learning, research and KT. This was likely to have impacted on participants' responses.

Acting

Key themes (categories) can emerge from the NGT process that were not obvious from the original posts. This demonstrated that the NGT offered participants an opportunity to debate and jointly come to decisions on priority actions. I also noted how successful the technique was in engaging participants in an AR process. Allowing sufficient time for the exercise was important but, if certain postings cannot be categorised by participants, I would suggest these should be noted as outliers. Large numbers of outliers would impact on research authenticity but equally so if 'forced' into particular categories. But these should be acknowledged and identified in any evaluation/interpretation.

A future research opportunity would be to repeat the process in other Schools of MU and within the sector to judge whether academic discipline impacts on actions proposed through an NGT focused on enhancing KT activity following the introduction of an R&IS. I would also note that allowance should be made for the potential impact of contemporary events on any findings. If resources allowed, similar ARG exercises could take place with different groups over a longer period of time.

4.6 Summary of evaluation and comparison of action areas raised in ARG and Interviews

The research focused on the actions emerging from both the ARG and the individual interviews. Tables 7 and 8 below compare issues relating to motivational aspects and embedding the R&IS from the ARG with similar issues from individual interviews. There are consistencies despite variation in specific actions resulting from differing research methods of inquiry.

Table 7 Comparison of ARG categories and some common key areas with individual interviews – Motivation of the R&IS

ARG	Interviews
Positive impact on staff development	Focus on ECR development and developing academic potential of individuals
Supports collaborative partnerships (internal and external)	KT leads to collaborative partnerships
Personal recognition	Recognition-financial, academic objectives, by senior managers, promotion etc.
Supports meeting broader University objectives in teaching, learning and research	Flexibility to support a range of University objectives – leads to more rounded academic, supporting knowledge development
Opportunity for personal gain – promotion and personal payment for some	Nature of KT is rewarding in itself – ‘making a difference in society’ – but personal payment for some

Table 8 focuses on the comparison of the actions to further embed the R&IS following Cycle 3 research.

Table 8 Comparison of ARG categories and personal Interview– Embedding the R&IS

ARG		Interviews
Clarifying	Understanding Information Examples Workshops Awareness raising Case studies	Awareness raising Understanding Informing
Building, developing and enabling	Internal collaboration Seminars and events ECR support Joint appointments Appoint lead/champion	Define process and decision making of scheme Support staff development ECR development Admin support needed – RKTO improvements Appoint lead/champion
Sharing	Newsletter Publicise Meetings	Share examples of success Agree consistent approaches
Challenges	Insufficient time in Work Programme	Insufficient time to maximise use of R&I S Timelines for implementation of scheme within year too short
Enhance Academic Practice	Demonstrate links between teaching, learning and research	KT is in itself rewarding, supports academic curiosity and, knowledge development KT is inherently rewarding Avoid KT/’commercial’ language
Measuring and evaluating	Use of appraisals to enhance use of R&I S	Provide space to use R&IS in Work Programmes Use appraisals to raise profile of R&IS

T4. TRANSITION PHASE 4 – CYCLE 3 TO MINI-CYCLE

Synthesising the interviews and the ARG for Cycle 3 created a host of actions, many of which I could have embraced in future planning as part of my managerial responsibilities. As an immediate response, the R&IS was substantially amended for 2014/15. Principle areas for review were:

- the whole R&IS was drastically reduced in size and complexity
- a 'Key Facts' box was provided and included for principle statements directed at intrinsic and extrinsic motivators as a result of the research
- the process was outlined in a flow chart
- 'commercial' language was kept to a minimum
- key areas were highlighted – in particular when individual rewards could be claimed
- the purpose and intent of the R&IS was clarified.

A copy of the revised R&IS (June 14) may be found in Appendix 61.

However, in terms of this AR-based project, I wanted to continue to harness the ARG to assist in the management process of embedding the R&IS within H&E. In this way, the ARG could continue directly to influence the engagement of academics with the R&IS and each member could, indirectly, be used as an agent of change within their Departments. As a senior manager, this also offered me the opportunity to engage with the ARG as a 'critical friend' in terms of my own thinking and development. I therefore decided to extend Cycle 3 as a mini-Cycle (as illustrated in Figure 18 in the previous chapter) using the established ARG as a continuing approach to the research. In addition to some actions already in place as part of the annual iteration of the R&IS document, there was a range of medium and longer term actions identified through the ARG and interviews. A key issue for this mini-Cycle would be to seek prioritisation of those actions and to engage ARG members in clarifying how these could be enacted.

5.0 Mini-Cycle – Using the ARG to Embed the R&IS More Effectively

Given the explanation of the Transition 4 statement, construction and planning stages were not necessary for the mini-Cycle as they had already been addressed within the development of Cycle 3. The priority actions to embed the R&IS had been established through Cycle 3, as had the value of the ARG approach. Figure 19 illustrates this situation, with Construction and Planning shaded. For convenience and clarity, the mini-Cycle has been termed ARG2. The mini-Cycle forms part of, but follows on from, the evaluation of Cycle 3. This chapter describes the implementation of ARG2 and its action outcomes.

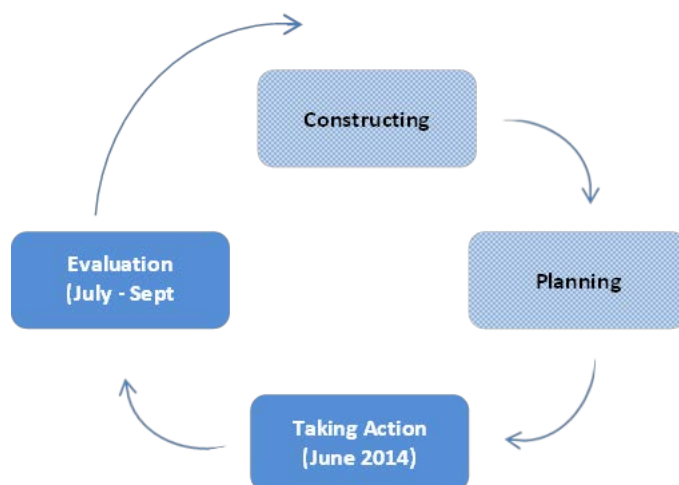


Figure 18 Truncated stages of the mini-Cycle

5.1 Taking action – ARG2 in method and process

This section describes the approach taken through the ARG2 to derive priority actions and recommendations for how to embed the R&IS within H&E more effectively.

The second meeting of the ARG was held on 12th June 2014, originally chosen to maximise attendance and to enable resulting actions to be applied for the new academic year. A number of ARG participants were unavailable at short notice due to exam boards, illness or critical meetings. Seven participants of the original ARG (ARG1) were able to attend. Information and characteristics of those attending ARG2 are found in Appendix 62.

The room was arranged so that all participants sat in a semi-circle. Each introduced themselves, as some participants did not know each other. I provided a summary overview of the results

from the ARG1 and comparisons with the personal interviews. I outlined the purpose of the meeting and the outcomes expected. Aims and objectives were to embed the R&IS into H&E more effectively and create action plans to that end. Participants accepted and agreed to these aims and objectives. The ARG decided to focus on the top three themes for action from ARG1, as shown in Table 8: Clarifying; Building, developing and enabling; Sharing.

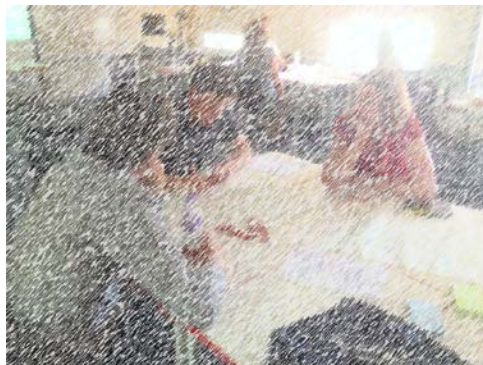
Three inter-disciplinary teams were formed around tables and drawing materials provided. Each team was asked to produce a flow chart or diagram to show how the chosen themes could be implemented, including:

- What actions might be needed?
- What resources were required?
- What were the timelines?
- What was the relationships between the elements?

I provided examples of some methods of approach (brainstorming, spider diagrams, process flow charts, etc), but each group could use their own approach and provide the required information in the most appropriate format. Each group was asked to consider one of the subset of actions within each theme from ARG1 (see Table 8 in the previous chapter):

- group 1 – **clarifying** – chose to consider ‘awareness raising’
- group 2 – **building, developing and enabling** – chose to consider ‘the role of champions or leads for KT’
- group 3 – **sharing**- decided to tackle the whole theme.

An hour was provided for each group to consider and then present their results on a large flipchart (see Photograph 6), each nominating a spokesperson. The ARG was then invited to comment and discuss the results in an open-group format.



Photograph 6 A group of participants of ARG2

Learning in Action – Taking action – ARG2 in practice

This section reflects on the possible impact of changing membership of the ARG, the challenges in achieving expected goals, the benefits of an independent facilitator and resources to support actions.

Experiencing

Unfortunately, I had to act as the facilitator as my colleague from ARG1 was absent; I had valued that independent support. Attendance was affected, for good reasons, and in particular, no ARG members from Mental Health and Social Work etc were available.

I found it challenging to manage the ARG to remain on-task as the focus kept moving away from issues related to the R&IS and back to KT itself. In addition, the action planning I had expected to be provided was inadequately addressed by two of the groups.

During this process I noted my concerns as to how to respond if an action arose that I could not support, as a senior manager.

Understanding

I felt confident in performing the facilitator role, but one might need to consider whether my senior position, and existing relationships, may have impacted the contributions. As the ARG2 activity progressed and flowed from the work of participants of ARG1, there may have been an issue of coherence and continuity through participant absence and new members. This may also have impacted on the development of mutual group knowledge.

Variance from the 'embedding' theme into KT more generally could have been detrimental in terms of developing expected 'actions'. Without well-formed action plans on three critical themes, there might have been an insufficient mandate to progress actions.

A potential hazard for the senior manager in using AR through participative groups is that all actions could be argued to be valid and, to ensure authenticity, one should honour these as devised by the group. The combination of facilitation and peer engagement should have resulted in realistic and appropriate actions.

Judging

I supported authenticity of the process through:

- * establishing that proceedings were confidential
- * constant re-affirmation with participants of their comfort with the tasks and seeking regular opportunities for input (there were no suggestions to change the task remit)
- * reducing my influence by having no further direct influence over the group work which was controlled by participants
- * encouraging open and frank discussion of feedback groups determining the actions
- * post-event – reconfirming findings with participants
- * A significant core of the ARG1 participants remained and, although direct comparisons between the groups might not be valid, the task I set was quite specific and was consistent with actions that had emerged from that original ARG. However, this might have explained the need for me to have had to revisit the nature of KT as a topic in itself.

The ARG2 could have progressed further in focusing on the processes for embedding the R&IS. Although I was satisfied that significant progress had been made in identifying clear pathways to further embed the R&IS, more could have been achieved if participants had not spent time debating the nature of KT. Actions to embed the R&IS more effectively were identified, but processes to achieve this were not as well developed. This was not the result I had intended, but did provide a mandate for progression of key actions in line with the original ARG and interview planning. The most compelling concern in terms of my ability to facilitate the actions as a senior manager was the limitation of resources – time remission on Work Programmes or additional staff, facilities, administrative support, etc.

Acting

I did not feel my presence as the facilitator had a significant impact on participants and results. I had confirmed with participants that they were comfortable with the process and outcome. However, I think it more appropriate to use independent facilitation to avoid researcher bias. This would also allow me to observe future proceedings more ably. In future ARGs, I would give greater focus to ensuring that all participants met the expectation of the set task.

The proposed actions of ARG2 did not appear to be unacceptable in terms of ethics, resources or realistic implementation. However, resources were of concern in general as Work Programmes were under the auspices of HoDs and beyond the control of ARG members.

5.2 Evaluation

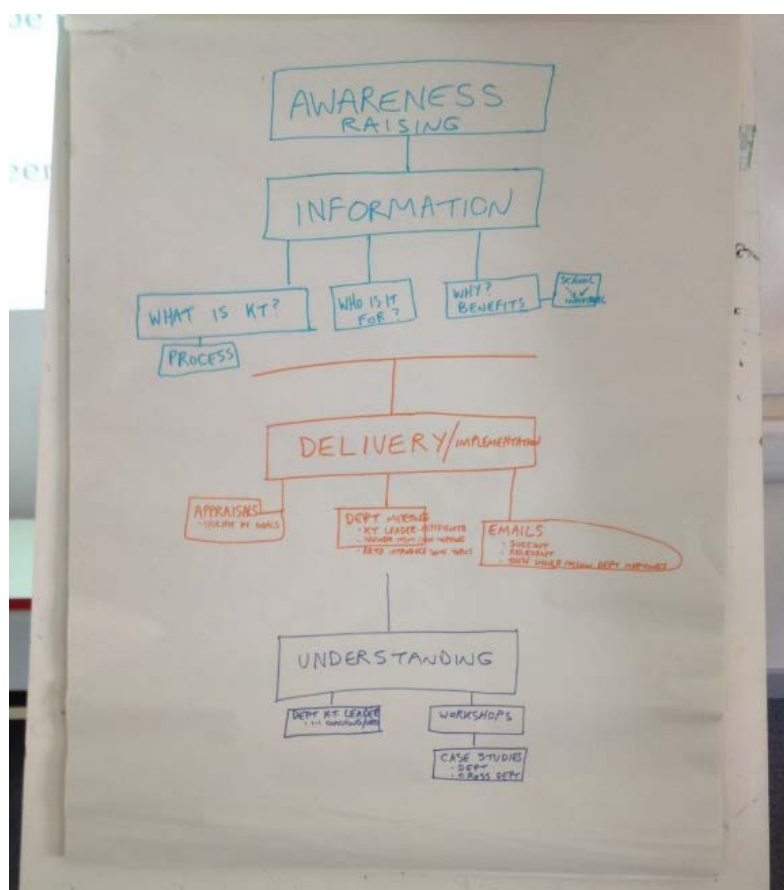
This section evaluates the outcomes of the ARG2 and synthesises these into core, priority actions.

5.2.1 ARG2 action planning results

In this section, the results of ARG2 are provided, in the three themes, together with a reproduction of the action plan flipcharts.

Group 1 – Clarifying – awareness raising

A photograph of the group's action plan is reproduced in Photograph 7.



Photograph 7 Group 1 action plan

The action plan comprised three clear areas: information, delivery/implementation and understanding.

In terms of *information*, there remained a lack of clarity as to what KT was, who it benefitted, and how relevant was it to HE. The issue of individual versus collective rewards was raised, but overall the group was focused specifically on KT itself.

For *delivery/implementation* of awareness raising there were three areas of specific focus:

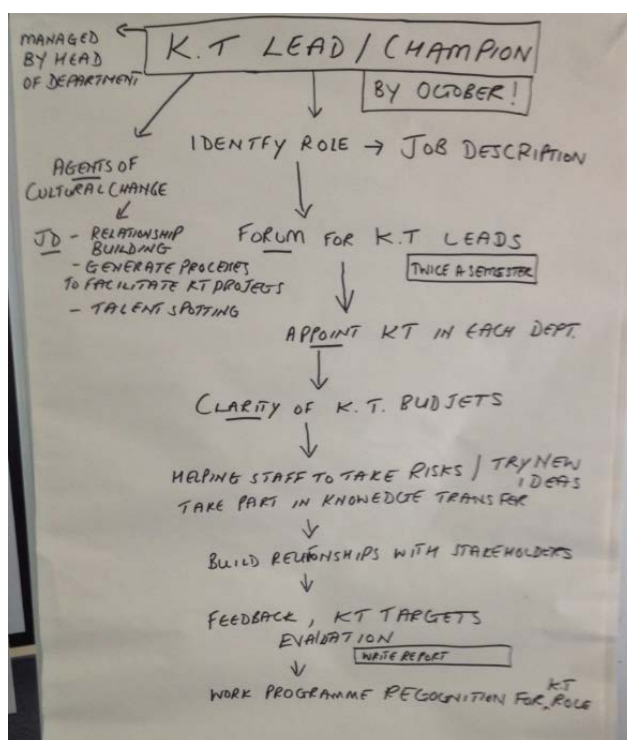
- appraisals – goals should be set for KT and use of the R&IS
- Departmental meetings – KT should be a standing item. A KT 'lead' should be appointed in each Department to support the use of the R&IS
- e-mails – regular but succinct updates should be provided relevant to each Department.

As part of *understanding* a key recommendation was to appoint a KT lead to offer individual-level support. This would be augmented by additional mechanisms such as published case studies and carefully directed workshops specifically to focus on the impact of the R&IS.

The group discussion on this particular plan focused on two areas in particular. The first was how the R&IS might be used to support target setting as part of appraisals. Some participants were not aware that there were existing opportunities to claim work hour remission against KT activities. The second key area of discussion centred on the need for each Department to have a KT lead. This led to cross-fertilisation with the action plan from another group looking at building, developing and enabling.

Group 2 – Building, developing and enabling

A photograph of the group's action plan is reproduced in Photograph 8.

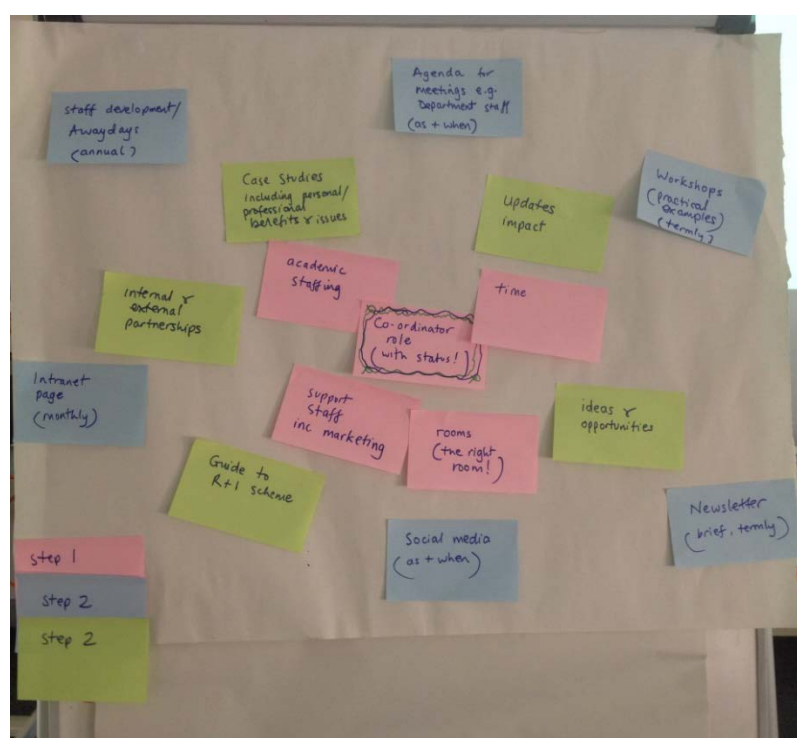


Photograph 8 Group 2 action plan

This group focused on the role of a KT lead in enhancing the embedding of the R&IS. Each Department should appoint a KT lead, operating to a common job description/role definition. The JD should clarify the KT lead's role as an 'agent of cultural change'. Within this, they should seek to build relationships and networks and seek out 'talent'. KT leads should be allowed some form of Work Programme recognition. An important role of the KT lead would be to coordinate the allocation of KT (R&IS) budgets under the direction of the HoD. Thence, they would be expected to provide feedback to the Department on success in achieving targets. In the subsequent discussion with the whole ARG, it emerged that one Department had appointed a lead and this was noted as having been reasonably successful. Lack of time within that role to really make a difference was noted. A role description needed to be produced for this KT lead role.

Group 3 – Sharing

A photograph of the final proposed approach is reproduced in Photograph 9 below:



Photograph 9 Group 3 action plan

This group took an innovative approach and tried to tackle the whole issue of 'Sharing' within concentric rings of actions based on priorities – Step 1 being in pink post-it notes at the centre, circled by the Step 2 in green notes and then encircling that a final Step 3 in blue notes. (Note the error mixing up green and blue rings and duplicating green and blue as Step 2 in the key – but it was clear that blue was Step 3). Each step contains a group of actions:

Step 1 actions – at the core was the appointment of a '*coordinator role with status*' with key responsibilities to enable the R&IS through:

- encouraging appropriate academic staff
- arranging suitable administrative/professional support staff
- seeking time allowances within academic Work Programmes
- sourcing suitable rooms (perhaps this could be taken as a proxy for a wider need for suitable facilities)

Step 2 actions – enabling aspects included:

- provision of case studies of the use of R&IS – to include personal, professional benefits and issues
- development of internal and external partnerships using the R&IS
- provision of a guide to the R&IS
- supporting ideas and opportunities as they arise
- providing regular updates on the 'impact' of the R&IS-funded projects.

Step 3 – focused mostly on the dissemination of information and how that could be enhanced/managed:

- staff development/away days (annual) to be arranged
- R&IS/KT promoted on the agenda of meetings – e.g. Departmental (as appropriate)
- provision of workshops using practical examples (termly)
- circulation a newsletter (brief and termly)
- utilisation of social media (as and when)
- provision of a relevant internet page.

It was not clear whether the coordinator role should be an existing role-holder, a new post, or at Departmental or School level. Some participants suggested appointing KT Leads at a Departmental level, but there was concern that this would not confer sufficient status to 'get things done'. The KT Lead could support colleagues in identifying funding opportunities, linking with the RKTO (although it was noted that such a role might possibly require an impossibly encyclopaedic knowledge of all the specialisms within a large Department).

Whether MU 'values' KT remained an issue, as it was suggested that undertaking KT was not sympathetic to a focus on raising research profiles as part of the revised corporate strategy. Following discussion, the group considered that KT fitted well with this strategic direction, as it

provided evidence of impact of research and income for research activities, and as close synergies between research and KT were recognised (e.g. contract research).

5.2.2 Actions arising from the ARG2

In order to judge authenticity of the findings, a summary of the photographs and key discussion points were circulated (Appendix 63) with a request seeking affirmation. There were no requests for amendments. Actions could be summarised into core categories, as follows.

Work programme management

A barrier to engaging in KT was perceived to be lack of time (see similar findings in Lockett et al., 2008; Francis-Smythe, 2008). Some academics believed that KT was not necessarily a core part of their role. A key action was to raise the profile of the R&IS and KT through the annual Work Programme planning process, seek specific objectives from academic staff and make time allowances as appropriate.

Action

As Deputy Dean, to seek a resolution as to how to recognise KT input part of the annual Work Programme planning process.

Information and guidance, including effective dissemination of same

Various specific and general actions could be identified:

Action

- * R&IS/KT to be addressed regularly at core meetings within H&E and its Departments
- * a School internet presence should be built for dissemination of relevant information
- * a termly newsletter/bulletin should be provided updating academics on R&IS outcomes and KT in general
- * the R&IS should be made more user-friendly
- * case studies and workshops that highlight R&IS impact should be arranged
- * social media might be used to promote the R&IS and KT.

(An example of a symposium developed as a result of the identified actions of Cycle 3 to raise awareness and understanding is provided in Appendix 64).

Professional support services

Action

Continue to seek effective and timely support from university services (RKTO, Estates, Marketing, HR, etc.) to enable H&E academics to take advantage of KT opportunities and to leverage the application of the R&IS.

Recruit and appoint a KT Lead within each Department

Action

To provide a coordinating and facilitating role, a KT Lead/Champion should be appointed in each Department. This person should have a status within the Department, championing KT and the R&IS, able to offer advice, support, guidance, mentoring and coaching to fellow academic staff. A common role descriptor should also be agreed and understood within H&E. This role holder would also have responsibilities for supporting the HoD in the implementation and monitoring of the R&IS.

Learning in Action – Evaluation

This section reflects on some important challenges that emerged from the evaluation of the ARG2 process.

Experiencing

I noted that ARG2 outcome actions duplicate a number identified by ARG1. The sub-groups worked well together in good humour, focusing on the priority action implementation. The identification of processes to secure the intended action were not progressed as intended. The identified actions provided further insights on embedding the R&IS.

Understanding

The small number of new participant members to the group may have led to revisionism and, at times, a return to the original ARG topics, however the focus remained on the task. Participants provided clear direction on embedding the R&IS more effectively. Perhaps participants had not experienced action planning through network diagrams, so chose approaches that partially addressed the task.

Judging

The ARG2 helped to focus priorities for embedding the R&IS out of a large number of actions resulting from Cycles 2 and 3. A number of participants were willing to be involved further in future ARGs on this topic.

Acting

The level of interest shown suggested there would be value in maintaining the ARG beyond the thesis remit to assist in future developments.

The priority action approaches devised in ARG2 informed management approaches for 2014/15. Indeed, as an example, KT leads were subsequently appointed and their role description may be found in Appendix 65.

6.0 Meta-reflection Utilising Mezirow's Model

This thesis has adopted a consistent structure, enabling extensive reflection leading to action at each stage of the various AR Cycles. One could adapt the 'Learning in Action' reflective format for the meta-level review of the project as a whole. This process provides an opportunity for research findings to have transformational impacts within an organisation and also on the development of the AR lexicon (Fletcher and Zuber-Skerritt, 2008) (see Table 9 for such a review).

Table 9 A Learning in Action process for the meta-level interpretation of the project

Pre-understanding

As a leading supporter of KT at MU, I have been engaged in its gradual corporate evolution. Personal interest and commitment to KT led me to contemplate this thesis, serving both academic curiosity and management performance objectives.

Constructing

The growth in interest and expectation within the HE sector of KT (nationally and internationally), was outlined in Appendix 1 with reflection on its inclusion within MU's Corporate Plan and academic profiles. KT in HE focuses on the role of Universities in the community and society, particularly as government seeks to be able to justify publically-funded research. But there is also an element of future survival. As Todorovic et al. (2011, p.136) noted:

“universities are adjusting to recent changes in the economic environment, and expectations for their contribution to innovation and economic development. As government funding becomes scarcer, universities are forced to diversify their revenue sources, become more efficient, and shift resources towards greater commercialisation of knowledge.”

Emerging through the AR process, Figure 20 shows the resultant AR Cycles.

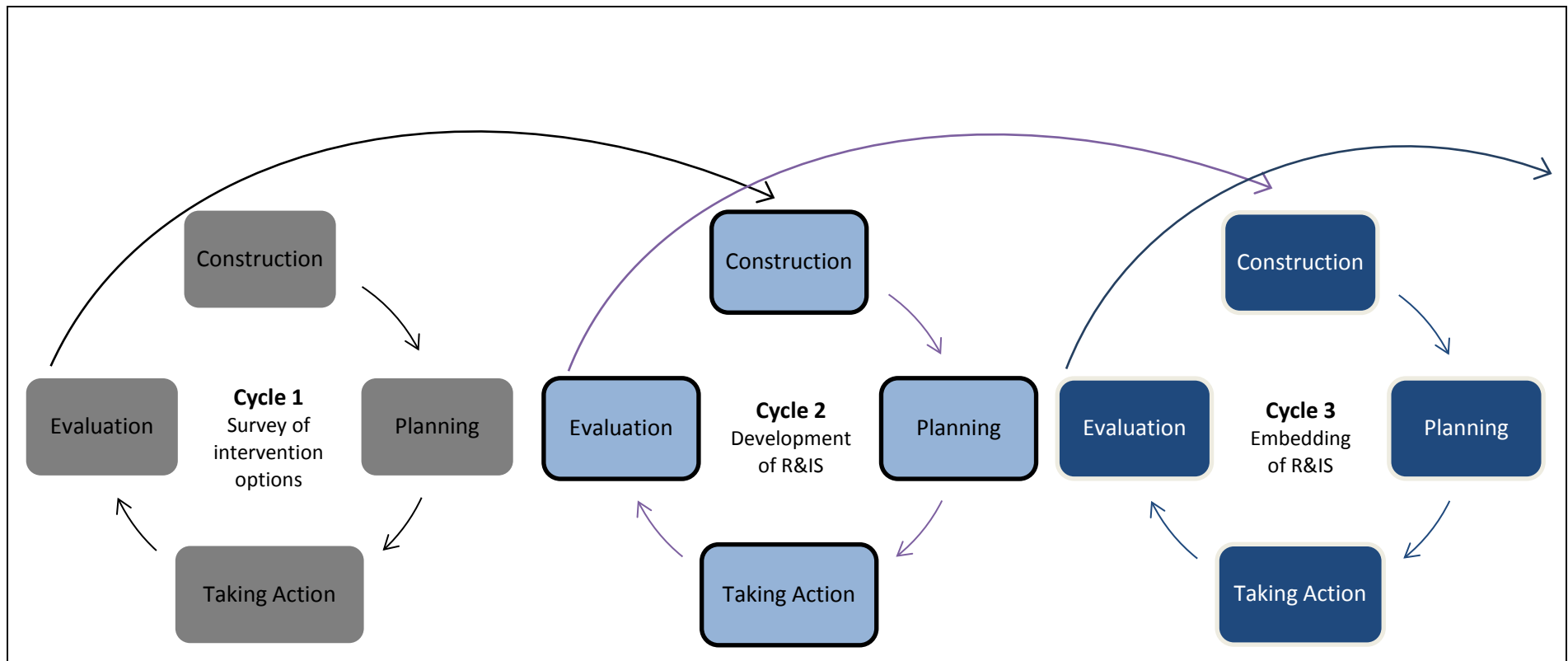


Figure 19 Resulting AR thesis Cycles

Planning action

At a meta-level, the justification for the research approach and consequent methods of inquiry are critical components of the research plan. The thesis adopted frameworks provided by Zuber-Skerritt and Perry (2002) and Coghlan and Brannick (2014), combined in a conceptual model. 'Project' AR Cycles are set within a contextual envelope of meta-reflection and evaluation. Research aims were proposed at the commencement of each 'project' Cycle, determined as the thesis evolved and subject to participant engagement: a process of re-assessment of the research aims as periodic reflection led to learning. The initial Cycle 1 Survey, based on literature and personal experience, allowed for academics within H&E to participate in directing the nature of subsequent AR Cycles.

Taking action

Actions, of value in themselves, are created within each project Cycle. Reflection within project Cycles led to higher, meta-level interpretation and learning, allowing meaning (theories) to be applied to both the practice of KT and using an AR approach in this context.

Evaluation

The project Cycles and meta-evaluations based on the Mezirow (1991) model (Content, Process, Premise), allowed for construction of meanings that were of immediate value to my development, impacted on my employer, could support KT professionals in HE and provided evidence of the value of using AR in this context.

Within the broader adopted framework of Zuber-Skerritt and Perry (ibid), it was felt that there was a need for a more powerful approach at the meta-level. As justified by Coghlan and Brannick (ibid), Mezirow (ibid) provided a useful approach through the reflection categories of 'Content, Process and Premise'. Although the debate on Mezirow's theories of Transformational Learning have been broad, such as whether the context of the learning environment is adequately considered, particularly for cultural diversity (Taylor, 1998), I was attracted by the framework suggested by Coghlan and Brannick (ibid), including using these categories as a sound foundation for this higher-level, project-wide reflection.

The remainder of this Chapter provides the meta-level reflections and higher-level theorising within each of the forms of reflection proposed by Mezirow: Content, Process, Premise.

6.1 Content

This form of reflection considers how the research has proceeded: What were some of the practical construction and design issues involved? What was the research built on, and how was it 'framed'?

6.1.1 Iterative process in determining AR Cycles

Development of the focus for the research and its Cycles

An initial focus for Cycle 1 in 2011 was the evaluation of new School Business Units which was hoped to engage academics in KT. However, comparisons between the Departments with nascent business-style units was challenging in view of the significantly different academic disciplines and their type of KT activity. These unequal units led to issues of potential validity for methods of inquiry, particularly the limited sample population. Additionally, a supporting tool I intended to utilise, MU's Client Relationship Management System providing details of numbers and types of business relationships, frequency of business connection, breadth of business types etc., was unable to provide real-time data. These deliberations led to a more investigative Cycle 1 Survey in order to determine future project Cycles.

This demonstrated the value of undertaking practice-based research within a professional doctorate in an AR approach, as it allowed flexibility within the research to adapt to evolving real-life changing circumstances – a common theme throughout this research.

Conceptual changes to the 'vision' of the research project

The vision of this research developed organically over time, as might be expected, through implementing an AR approach. A number of potential interventions (project Cycles) were identified as a result of the Cycle 1 Survey – indeed, an initial thought was to have several 'Cycles' running contemporaneously. Evaluating Cycle 1, I decided this would be too complex and ambitious (although reflective of real-world management and worthy of further research) and a more linear approach was selected for Cycle determination. The Cycle 1 Survey and background literature indicated that developing an R&IS could enhance engagement with KT. In time this led to the formation of structure to the research through developing an R&IS then focusing in future Cycles on embedding this in H&E. Variants along this theme were considered. Options included: incorporating the Cycle 1 Survey as a smaller part of a larger Cycle 1; a Cycle of development of the R&IS and its embedding; the use of an ARG within Cycle 3 over an 18-month to two-year period, etc. Over the course of Cycles 1 and 2, these various ideas were reviewed, leading to a final structure of:

- Cycle 1 – the Cycle 1 Survey, which identified R&I as a significant issue
- Cycle 2 –development of the R&IS
- Cycle 3 – embedding the R&IS and assessing the impact on motivation to engage in KT.

A fourth cycle was initially identified (a ‘champion’ role in facilitating engagement), but was set-aside as justification for any further Cycles needed to emerge from the Cycle 3 outcomes. I realised I was trying to plan too far ahead instead of allowing the focus to emerge as a result of the inductive/iterative AR (Cycles) approach. In the event, both supervisor and external consultant indicated that the completion of the three Cycles allowed for sufficient content for the DBA submission.

Evaluating Cycles that may be incomplete over the research period

It emerged in Cycle 2 that the impact from an AR intervention might not materialise within the scope of the DBA thesis – perhaps some years later. Several Cycles could be on-going simultaneously, raising issues about appropriate evaluation of complex AR projects. The literature acknowledged the issue of simultaneous Cycles, but views on how to support evaluations in such circumstances were limited. Correspondence with Professor Coghlan suggested the focus should be on the resultant actions rather than on analytical evaluation. Dr Burns’ (2010) writings on systemic AR helped me to understand the multitude of individual actions that could be on-going within a single AR project in a large organisation but, again, did not specifically address the evaluation issue. As the introduction of a R&IS emerged as the key ‘action’ for the AR project, I realised that I had focused on a detailed evaluation of the eventual impact of that Scheme rather than on the ‘action within the research’, learning iteratively from each action as it progressed.

Choice of Cycle 3

Research within Cycle2 had identified that a significant issue was the lack of guidance and mentorship available for KT and that it remained something of a mystery to most. It was my view that the introduction of KT champions was a potential next Cycle. I undertook an extensive literature review on the issue of their introduction in the business environment, planning this to be the next Cycle. However, emerging from Cycle2 and following discussions with my supervisor, consultant and fellow researchers, I determined that Cycle 3 needed to focus on the embedding of the R&IS within practices of H&E, including issues around motivation to engage with it.

Cycle 3 and the relevance of quantitative supportive data

Initially it was planned to triangulate Cycle outputs with MU's financial data. I had been invited to be part of a working group looking at such performance indicators and this led successfully to a refinement and improvement of the data provided to H&E, but fell too late for this project. Basic information provided an overview of financial performance within the period of the project, but did not provide the necessary richness. The focus of the Cycle 3 research on motivation of academics to use the R&IS and embedding this in H&E resulted in the limited relevance of the quantitative financial data, given the adopted methods of inquiry.

Complexity and 'messiness' of the AR approach

Common in the description of AR is that each cycle is interrelated, each spinning off the previous in a linear progression. Living the AR research experience, I did not feel matters were ordered to this extent. I struggled with the idea that cycles might move in parallel and the suggestion that one might re-visit preliminary stages as knowledge and experience of the subject emerged. AR in the field is complex and neat progressions of Cycles are rare – multiple 'spin-off' AR possibilities may occur and it was challenging to retain focus on the main research aims with new Cycle opportunities arising throughout the research. Coghlan and Brannick (2014, p.83) encapsulated my own views on this in that:

“Action Research has a large degree of messiness and unpredictability about it, in that it is research in real-life action. As the story unfolds, unforeseen events are likely to occur. Environmental events may create a crisis in the organisation, fellow key actors may change and so on. In your role as the insider Action Researcher and actor director, you are both creating and acting a script.”

This non-linear approach ('messy cycles' often moving off at a tangent from the original plan) is an inevitable yet potentially positive attribute of AR (Cook, 2009; Coghlan and Brannick, *ibid*; Klocker, 2012), often jumbling explicit and tacit knowledge to create transformational knowledge (Cook, *ibid*). Professors Coghlan and Munn-Giddings, in personal communications, confirmed that sub-cycles would be likely to spin-off from the main cycle. As Stringer 2007 (p.9) noted:

“AR is not a neat, orderly activity that allows participants to proceed step-by-step to the end of the process. People will find themselves working backward through the routines, repeating processes, revising procedures, rethinking interpretations, leapfrogging steps or stages and sometimes making radical changes in direction.”

This is supported by Klocher (ibid), who noted that ‘emergent’ research is not unusual in social sciences, but that AR does have a higher level of uncertainty than other approaches. However, the flexibility AR brings has many advantages in responding to inevitable twists and turns. I needed to learn this aspect of the AR approach, being innately a linear, forward planner – I had to come to terms with a far more flexible approach. Reason (2006) drew on Heron (1996) in contrasting Apollonian and Dionysian approaches to AR, the former where cycles are enacted in a rational, linear, systematic manner and the latter where there is an imaginative, fluid expressive, tacit approach to integrating reflection on action. Reflecting back on my own experiences, I would suggest I have balanced both approaches.

6.1.2 Impacts of the research itself on KT integrity

Development of Interventions may ‘isolate’ KT from the mainstream

The background literature in Appendix 36 suggested that introducing rewards could act to reduce creativity and might bias activity to tasks providing that reward. I retained a concern that interventions designed to promote KT through rewards might be counter-productive as they might serve to perpetuate KT as ‘third-stream’ alongside to teaching and research. Institutional rewards at MU (recognition, profiling and promotion) remained biased to research and teaching. It was challenging for KT to be recognised as an academic endeavour. Interventions such as the R&IS might be needed to support initial ‘acceptance’ of the credibility of KT with the objective of being mainstreamed in future when such reward schemes may be less important.

Cycle 3: The combination of research and KT allowances

The Departmental share of R&IS and RAE allowances for 2013/4 and 14/15 were announced as MU was seeking to enhance its research profile, a significant change in culture as research excellence had not hitherto been evident in all disciplines. H&E had promoted synergies between research and KT as a strategy – one cannot transfer knowledge without its production. For example, an organisation undertaking CPD through H&E may, because of the relationship, return for research. Conversely, a business/organisation, having collaborated on research, may then wish to invite academics to act as consultants. Indeed, ‘contract research’ could be viewed as either research or KT, or both. Perhaps it was inevitable that Departments would wish to combine larger KT allowances with the smaller research allowances. I supported this in the R&IS, but there was a danger that academics might have seen this as further proof of the predominance of research over KT. The R&IS may actually have resulted in the enhancement of both research and KT, but time will tell whether this works against specific KT interests.

6.1.3 Considerations on methods of the research

Integrity of Survey Monkey (SM) data

An interesting ethical issue that arose was that intelligence agencies in the USA have automatic access to SM data. Moreover, due to MU's SM licence conditions and the shared nature of its data, any authorised person can access any other MU survey. I was concerned to ensure the protection of anonymity of participants. On balance, I was confident that the survey's confidentiality would not be compromised. Participants could not be personally identified and I viewed that the data would be of limited risk to USA national security.

The choice of the 'interview' as a method of inquiry

The choice of undertaking interviews as the main investigative approach for Cycle 2 and part of Cycle 3 was challenging in view of the concerns on the subjective nature of the process. (The interview as a 'drama' between players (Pool, 1957)). Applying this more constructivist approach entailed significant personal learning. The interviews and analysis highlighted issues contained within the relevant **Learning in Action** sections. Significant for me was the engagement with a process that does not necessarily lead to generalisation of results to a broader audience. Although a semi-structured approach was used, there was significant room for variation according to the responses of each participant, and this highlighted the challenges in the authenticity of seeking comparability across interviews.

Cycle 3 – the relationship between interview and ARG

Initially the ARG and interviews were to run as separate methods of inquiry. The eventual concurrent timescales of implementation resulted in the ARG occurring immediately before the interview process, thus having an impact upon it. The interviews allowed a more individualised approach to enriching data obtained from the ARG. This has implications for future research in terms of how the ARG and interview process might work together to establish the most effective approach. With hindsight, I would undertake the ARG, fully interpret this, then construct the interview guide prior to the interviews and, in this way, integrate the two processes better. An added advantage of the ARG is that actions and their priorities were immediately derived from the activities of the group. This is not the case for interviews, where even the most diligent researcher brings their own biases in constructing meaning.

Changes in attendance to ARG2 from the original ARG (ARG1)—was there an impact on the integrity of the research?

Several participants of ARG1 were unable to attend ARG2 for good reason. ARG2 built on the initial work of the participants of ARG1 and one might posit a possible lack of coherence of engagement to enable continuity between and across the ARG. In particular, the opportunity to grow and develop as a group around the actions could be affected. Whilst it was disappointing that some original participants were not present, a core remained and the task was quite specific. Direct comparisons between the groups may not be entirely appropriate, but the characteristics of the groups, absence of ARG1 action revision and similarity of in-principle responses between the ARG1 and 2 led to confidence in authenticity for progressing research outcomes.

Setting a task to the ARG and achieving the set objective

Concerns emerged regarding the responses of the ARG2 participants in that the task set was not fully completed. Rather than providing a full action plan ‘process’ for embedding actions of ARG1, ARG2 largely produced an intermediary step exploring further the pathway to action on each key theme but not the full process. This might simply have been because participants were not familiar with these processes and the steps-required and I remarked on this in the relevant **Action in Learning** section. The learning from this was to ensure absolute clarity of the full task set to any future ARGs. However, in an AR context, I believe there is a limit as to how far a facilitator could go in ‘controlling’ such a group. Care would need to be taken, as in an interview situation, that the facilitator allows for the ARG to be creative and address the issues, developing actions according to its own volition.

6.1.4 Ethical and power considerations

Ethics, AR and the ‘insider-researcher’

As a Deputy Dean strategically managing aspects of KT and Research, I was ideally positioned to leverage existing personal and organisational resources to support the research project. I also had access to broader university resources due to long-standing relationships and was aware of political, social and personality cultural issues. Such access is an advantage of the insider-researcher. As Coghlan (2003, p.452) noted:

“insider research is valuable because it draws on the experience of practitioners as complete members of their organisations and so makes a distinctive contribution to the development of knowledge about organisations.” And further, “such researchers

have an opportunity to acquire 'understanding in use' rather than 'reconstituted understanding'."

Insider-researchers are familiar with internal jargon and organisational nuances, and their pre-understanding of the business context allows greater opportunity to understand how to achieve organisational change and development. Considering insider-research:

"AR has a particular contribution to make to organizational research as it generates useful knowledge about how organisations manage change and how key actors perceive and enact their roles with regard to change." (Coghlan, *ibid*, p.452)

This is a particular aspect of AR in that the researcher works with work colleagues but is also an active participant affected by potential changes themselves. S/he works within a known political system and has to be able to balance this knowledge with achieving research of authenticity. In this respect the researcher is a "political intrepeneur" (Bjorkman and Sundgren, 2005). The researcher not only works with a theoretical construct but also "the lived experience of their own organisation" (Coghlan, *ibid*, p.456). Conversely, as an insider-researcher, one might be too familiar with 'how things are done' and fail to ask the right or more searching questions. In particular, previous interventions and actions may have impinged on my thinking. I also had to caution against any personal bias by selecting appropriate research inquiry protocols. Thus, pre-understanding allows the internal-researcher greater opportunities to build on knowledge to provide a more extensive range of data but also may bring disadvantages in terms of blindness or naivety about certain situations. The insider-researcher could face restrictions due to status or position that may not apply to somebody employed from an external agency to undertake a project. I may also have been seen by some as having a vested interest in KT development and, after ten years of championing KT, I had to be aware throughout the research of my own personal values, opinions and feelings so that these were acknowledged and addressed within research approaches. As Coghlan (*ibid*, p.456) noted when describing insider-researchers:

"they need to learn how to look at the familiar from a fresh perspective and become open to discovering what they do not see and how their perspective is grounded in their functional role or occupational subculture."

I needed to be constantly reflective and self-critical of my own research and build-in feedback from and involvement of participants. Rooney (2005) considered the potential impact of an insider-researcher on the validity of research outputs, an interesting position as many relativist

researchers would not acknowledge the concept of 'validity' in a positivist sense. The realist position, where validity can only be demonstrated through the production of objective knowledge (i.e. that there are objective truths and realities that research should identify) is not accepted by most phenomenological researchers, who propose that there is no objective truth and 'reality' is shaped by social interactions. Rooney (ibid) suggested a variety of alternative terms to validity such as credibility, transferability, dependability, conformability and, my own preference, authenticity. Some phenomenological researchers would argue that this engagement within society as a researcher leads to more authentic results:

"From an anti-positivist perspective therefore, insider research has the potential to increase validity due to the added richness, honesty, fidelity and authenticity of the information acquired." (Rooney, ibid, p.7)

For many forms of highly participative AR, one could argue there is no distinction between the researcher and the researched so there is no opportunity for 'validity' in an objective, realist fashion. The insider-researcher is actively involved in the subject of study. Rooney (ibid) suggested that as an insider-researcher there is a blurring of boundaries between the researcher and the researched. To suggest that an Action Researcher can remain entirely objective is arguable. Depending on the level of democratic-style participation used in the research, any individual who facilitates AR will interpret results according to their own social, political and moral stances. Imperatives for me are for the researcher to ensure high standards in the quality of the research approaches followed, compatibility within the relevant research community and that they analyse the data with truthfulness. Avoiding personal bias due to internal knowledge was particularly challenging for my experience, given my status within the organisation and the consequent relationships with the participants.

Roth et al. (2007) identified six key recommendations for ensuring the success of insider AR projects, to which I have added responses relevant to my research in italics:

- Ensure the right composition of people involved in the AR project as participants/contributors – *significant steps were taken to try and ensure representative sampling of participants even when purposive or convenience sampling approaches were used. In all cycles the participants were volunteers. However, those volunteering may have had reasons beyond the research project for doing so. Some colleagues may have wished some form of favouritism or relationship with myself as a manager, others may have felt obliged in some way to have taken part. However,*

participants were highly engaged in the process and, as my research records, were open, frank and honest in their responses.

- Senior level commitment to the project and that it is grounded within the organisation – *the research was supported by the Dean. Participants were aware that the research, whilst of great value to H&E and supporting the university's objectives, was also forming part of personal objectives. Given institutional commitment to KT, the research was potentially of organisational value.*
- Define the scope of the AR project, both in academic terms and in terms of value to the organisation – *the scope of the AR project had been clearly defined both at a strategic level and to each individual participant. Each participant was provided with an outline of the objectives of the particular research cycle and the project was supervised as a professional doctorate.*
- Attempt to phrase the AR project within the organisation in non-academic terms – use terminology that is familiar within the organisation – *for each AR stage participants were provided with a non-technical briefing.*
- Act as a political intrepeneur – the researcher needs to be able to “sell and maintain the credibility and momentum of the IAR project continuously and be able to talk to management, as well as to different communities in the organisation to catch attention and engagement at all levels “ (p.58) – *the overall purpose of the research was supported by management levels within the organisation and through the supervision provided for the DBA.*
- Maintain and continue to develop the legitimacy of the project over time -*as an AR project the ongoing re-evaluation/ reconnection with participants provides some evidence of legitimacy. The process of construction, planning, action and review-involving those participants-provides highly useful and continuous touch points of authenticity through the project life cycle.*

As McNiff and Whitehead (2011, p.86) stated, “involving other people in research demands ethical awareness”. They go on to identify three areas of ethical concern that all research should consider (responses relevant to my research are in italics):

- Negotiating permissions from participants and securing appropriate access within the organisation – *the DBA formed part of my management performance indicators, attracting executive level support. All participants for each cycle of the project were*

volunteers and each was provided with a consent form which identified how results, and the evaluation of those results, would be utilised.

- Ensuring confidentiality where appropriate and generally protecting the participants – *confirmations were provided to all participants that anonymity would be safeguarded in any published reports or evaluations. Security measures were put in place to manage recordings and any hard copies of analysis. Participation in the ARG meant that members of the group could identify each other, however, members agreed to confidentiality of proceedings and consents were gained and data secured.*
- Assuring good faith – create a reputation for integrity and protect it – *it is difficult for me to judge whether others believe my approach enjoyed a level of integrity and quality. I aimed to achieve this as demonstrated herein and in the manner in which the research data was accumulated, managed, processed and reported.*

My supervisor provided valuable advice on the appropriateness of approaches taken for the questions devised for interviews and related matters. As Krim (1998, in Coghlan 2003, p.457) noted in respect of the use of others to provide a balanced overview, “if the AR is part of the requirement for a degree, then the academic supervisor performs that role “. I was fortunate to have a senior academic and respected AR researcher as a consultant, able to review samples of project reports, stimulate debate around AR and direct me towards useful literature. Providing a level of independence, a senior colleague facilitated the ARG1, allowing me to be an independent observer of the process. As with any insider-research, the issue of bias required continuous focus, particularly where the researcher is the leader of the project, occupies a senior management position and has a vested interest in enhancing engagement of academics in KT. The very nature of the research provides some level of confidence against bias. The overall research objective was to enhance academic engagement in KT, not to query whether this was a positive or negative thing. In that respect, the overall bias I have towards KT growth is partially nullified in that this is a University objective.

The ARG offered a valuable opportunity to address bias as results were directly influenced by all participants. The nature of NGT in ARG1 provided a level of democratic agreement in terms of potential ‘actions’ as those flowed directly from participant input. For the ARG2, the independent facilitator was unavailable and I undertook this role. My approach was to focus on the advice of McNiff and Whitehead (ibid) and ensure that there was: buy-in to the task for the group; absolute confirmation of confidentiality; integrity of both the process and the resulting actions through independent, direct outputs from tasks set; affirmation of the results.

I acknowledge that the tacit knowledge of the researcher has to have an impact on the process (Rooney, *ibid*). As an example of actions to mitigate this, questions for interviews were considered by my supervisor and in consultation with fellow researchers within H&E, leading to significant changes within the Cycle 1 Survey.

Coghlan (2003, p.459) suggests a difference between mechanistic and organistic AR:

“As mechanistic AR is directed towards a pragmatic outcome, the benefit for the organisation may be clear and more acceptable, whereas organistic AR is potentially more subversive as it addresses underlying assumptions and defensive routines that members of an organisation may feel uncomfortable about being exposed and then may oppose and subvert.”

Personally, I am not convinced by such differentiation in practice, as both offer the opportunity for transformational change and social and individual enhancement and emancipation – mechanistic AR might be more polarised as it is built around clear objectives and, in this respect, my research was more mechanistic than organistic.

Power and hierarchical issues for the researcher

As a Deputy Dean engaged in AR, I was also aware and considered within the research process inevitable power and status dynamics. The insider-researcher is part of the organisational and social system rather than an independent external agent and his/her research activities will, as a consequence, inevitably be ‘political’. They need to use knowledge of internal politics to achieve research outcomes but ensure that this does not become unethical practice (Coghlan and Brannick, 2014). As an Action Researcher I sought a participatory approach and care was taken to ensure participants’ views were genuine and voluntary. It was important to respect the position of others and any confidential information that was provided. An ethical issue might have arisen if confidential information had come to light that could breach University protocols and, as a manager, I would have had to consider disciplinary avenues. Fortunately, no such issues arose. Coghlan and Brannick (*ibid*) suggested that senior staff should be aware of their duality of role, as the researcher and as the manager who might eventually implement change. As has already been identified, change through AR is inevitable – it is the very nature of the research – but care needs to be taken to address:

- the inner dynamics – how the researcher copes with their roles
- the external dynamics – roles expected of the researcher and any ambiguities between them

Mumford (2006) suggested a formal action document should be drawn up with a precise specification of processes, objectives and outputs agreed by all parties involved. This 'contracting' element was achieved partly due to the administrative processes required as part of the DBA, but also through the provision of information sheets for participants in advance of research activities plus the use of consent forms. In addition, the hierarchical impacts were addressed and minimised by:

- engaging the volunteers as participants in the research, having a direct interest in the results
- the line management of the participant was not myself providing a useful 'firebreak' between myself and colleagues
- the use of independently provided qualitative data, although more limited than originally planned, provided externally authenticated outcome measures
- the use of a supervisor and an external consultant assisting in providing on-going independent evaluation
- awareness of participants that their contributions were provided in as much confidence as is reasonably practicable and that their position would be respected.

Consideration of ethical issues using Cycle 2 as an example

Using Gelling and Munn-Giddings' (2011) key ethical issues to consider in AR (Appendix 66, including my commentary relevant to my research):

- value was implicit in the nature of the research to the participants and the organisation
- the research process was rigorous and applicable
- participants volunteered and care was taken over confidentiality and transparency
- informed consent was achieved, and the rights of participants was observed (all had the right to withdraw at any time).

Addressing ethical issues related to AR is a challenge for most university research committees. The inherent messiness, evolving nature and research within the organisation does not equate to those more used to the researcher as an external, objective and impartial observer – an approach not suited to AR. This was not the case at MU, where the ethical approval process recognised the potential variable nature of this AR thesis within boundaries set by the exemplars used to illustrate possible project cycles at the PAP event, which considered the

DBA research proposal. Gelling and Munn-Giddings (ibid) noted that there was some evidence that Research Ethics Committees were becoming more familiar with the nature of AR.

Using AR within a DBA as a senior manager where the subject of the research requires delegation of actions

AR Cycles were applied within work areas where, as a senior manager, I am likely to delegate resulting actions, a situation not uncommon and where evaluation may be impacted by the actions of others. For the DBA this raised an issue as to whether the responsibility for any impact from identified actions lay with me as the main researcher. Given the DBA is supposed to be reflective of the operation of senior staff within an organisation, this issue is part of the complex, real world situation within which professional doctorates are undertaken. As my external consultant acknowledged, as an Action Researcher I have the dual role of facilitating the research leading to actions and acting as a leader/catalyst for change within the organisation. This seems to be a fertile area for further research.

6.1.5 Demonstrating quality and rigour of the AR research

Validity v authenticity in AR

Authenticity is perhaps a more accepted term for relativist researchers than validity. Qualitative research design is emergent in that the design can change as a result of intermediary outcomes (Gray, 2009), concurring with the AR iterative approach. In AR, where the researcher is an integral part of the process, or as Robson (2011, p.157) wrote, “the researcher as the instrument” there is potential for bias, an extreme example where the researcher ‘goes native’ in ethnographic research. Appendix 67 provides considerations of literature relating to validity v authenticity. Core amongst these reflected in my research were:

- the study design was appropriate for the research question (Gray, ibid)
- Stringer’s (2007) views on the need for ‘credibility’ (participants given time to contribute, observations made over time, participants able to verify data, concepts drawn from the participants contributions)
- the rigour of the research process (Robson, ibid)
- the research was ‘fit for purpose’ (Askey and Knight, 1999)
- care was given to the sensitivity of the impact on participants (Yardley, 2000).

Bryman (2012) attempted to reconcile interpretive with realist (positivist) research concepts:

- Credibility – internal validity

- Transferability – external validity
- Dependability – reliability
- Conformability – no overt bias.

Such attempts may pander to positivists and undermine the interpretists' position. The key issue for Action Researchers is to be able to demonstrate the rigour and quality of their research so that it can stand up to external scrutiny common in peer review by the academic community and, for related publication, through the editorial boards of journals and their critical readers. This should also include learned professional bodies and practitioners as, otherwise, the research might be disseminated only in academic circles although often highly practitioner focused. Quality and rigour can be established through a highly reflective AR process. Coghlan and Brannick (ibid) argued that, in order for the AR researcher to demonstrate rigour, they needed to be able to show:

- they have engaged in steps of the cycles within the research
- they have challenged and tested their own assumptions and interpretations as to what was happening throughout the project –e.g. Content, Process and Premise reflection (from Mezirow, ibid)
- they have assessed different views as to what was happening
- their interpretations are grounded in scholarly theory – outcomes tested and challenged.

H&E researchers originate from a variety of ontological and epistemological positions. I noted that many researchers engaged in subjectivist, phenomenological research often feel they need to allow for positivist justification, perhaps seeking acceptance of their research as being valid and of equal value. This is seen in Coghlan and Brannick (2010, p.5) drawing parallels of AR with scientific method (notably reworded in their 2014 edition, the latter including a further review of AR as a science, p.50). This is reflected in the health sector where positivist approaches are common due to the dominance of medical models, despite clear logic in many situations for the use of subjectivist approaches, or at least mixed methods.

Generalisability

The nature of AR means that there is no fixed outcome applicable to all contexts. This is because the work is specifically tightly focused on researchers' own professional practice and those of their colleagues. As McNiff and Whitehead (ibid, p.32) suggested, such researchers:

”Judge their work not in terms of its generalisability or replicability, which are social science criteria, but in terms of whether they can show how they are living in the direction of their educational social values, using those values as their living standards of judgement.”

But it should be noted that this comes from a particular stance and is typical of McNiff and Whitehead’s positioning on AR. The results of this research may not be transferrable to all academic environments, but they add to the knowledge in the field to assist in policy determination. As Bryman (ibid) noted, action research findings can be generalised to the development of theory, if not to the general population.

Challenges of using AR

It is relevant to consider and note some of the potential challenges in utilising AR:

- the AR process used for a DBA has been complex and the nature of the project has changed as a result of the various project cycles resulting in the ‘messiness’ referred to previously
- working as an insider-researcher can be challenging. I worked with participants who might well have been affected by any actions (decisions) taken. As such, change brought about by the research might have impacted on workforce dynamics
- the researcher is a part of the research process, raising issues of impartiality. A thorough knowledge of the organisation has been a positive attribute but may have prevented a clear, unbiased viewpoint. I have used the meta-analysis to reflect on these issues
- it is my intention to add to scholarly knowledge and understanding in a broader context but this research is based on one part of the organisation and its operations so caution is needed in extrapolating outcomes beyond H&E
- there can be challenges in defining roles, responsibilities and overall ownership of the research as participants are members of the research and not subjects.

Quality aspects relevant to the AR approach

In light of these issues above, the approaches to ensure high quality of the research included:

- a rigorous approach applying the determined AR approach and related methods of inquiry, including data sourcing and management
- engagement of participants in the outcome measures

- sourcing data from support services in MU not within the researchers influence – i.e. providing certain, if limited, degree of independent and verifiable sources
- regular sessions with the DBA supervisor together with support from an independent and experienced AR researcher allowed for internal and external verification processes
- a key component of quality assurance and, additionally, an approach to note and address potential extraneous variables, was my reflective diary/journal. As Gray (ibid) summarised, key issues addressed in the journal included:
 - processes involved in approaching the research and making contact with participants
 - experiences (positive and negative) in getting access to respondents and in using data gathering instruments
 - recording of literature sources
 - reflection on the interpretation and presentation of results, including any changes in direction.

As Reason (ibid) stated, the rigour and validity of AR is assisted by being clear what decisions were chosen and how these were justified within the participative process. One must not be distracted by the degree of messiness – as Cook (ibid) noted, within this mess lies a space for contesting interpretations of perceptions of theory and practice, building authenticity through a level of deeper knowing. Reflection within the meta-analysis provided a clear opportunity to demonstrate quality assurance/rigour/authenticity. This was completed contemporaneously with the research.

Introduction of more participative approaches as part of Cycle 3

As I approached Cycle 3, I believed it would be appropriate to engage in more participation in the process. The research aims of Cycle 3 led to this approach, in view of the need to consider the motivation of academics engaging in KT and also the process of embedding the R&IS. On reflection, during the transition from Cycle 2 to Cycle 3, I felt that there needed to be a more independent review of the analysis. Up until Cycle 2, interpretation of the process had been undertaken by myself. The interpretation of meaning that emerged from my analysis of the data and the subsequent R&IS that evolved from Cycle 2 was then distributed for consultation. Participant engagement in interpretation and decision making on the actions to be taken was built into Cycle 3 more directly via the ARG. I considered the literature on the use of decision-making groups and identified a number of techniques that could be utilised. Underpinning the R&IS, individuals would ultimately benefit, even if bidding as part of teams. The individuals are

thus a unit of inquiry, as are their teams. Groups and individuals can be subject to motivational forces and this research needed to address both. It was challenging to see how this could be achieved purely through an ARG. Indeed, just as it was not possible to generalise from AR broader than the organisational units within which it was applied, it would not be acceptable to suggest that motivational and embedding issues derived from an ARG could be transferred directly to the individual level. Thus, Cycle 3 needed to include both ARG and individual interviews. (Further reflections on 'participation' in AR are discussed elsewhere).

6.2 Process

Consideration of the process (how things were done), strategies and how the research was conducted.

6.2.1 Aspects relating to the process of the research

Early stage project 'construction'

Early stage constructing refined the research aim from the initial project proposal to providing more focus in terms of how to *engage* academics in KT. This 'constructing' stage in Cycle 1 was aided through the initial pilot built around setting up individual business units. The intention was to conduct a survey, in-depth interviews and an Action Learning Set to establish those units. The pilot study, involving six academics familiar with KT, demonstrated concerns that the focus on units was too restrictive. This necessitated re-negotiation with my Dean who had hoped the project would support the development of a new Unit within the recently restructured Education Department. The pilot suggested there was a primary need to establish what *broad* key issues faced H&E academics (as opposed to other organisations in the UK, shown by previous research). This was a good learning point and resulted in a much expanded survey questionnaire covering a broad range of KT engagement issues that informed the project construction. The pilot also led to improvements for the main survey, for instance the order of the questions, allowing space for commentary from participants and an improved explanatory introduction. This process refined the project, setting the framework for subsequent Cycles and illustrates the inductive nature of such research. Rewards and Incentives were identified as an issue from the Cycle 1 Survey and approaches were considered as to how to investigate this issue. Whilst I was from a predominantly science-based background, I could see that the need to investigate attitudes, perceptions and motivations suggested a more qualitative approach.

Cycle 1 online survey experience

The Cycle 1 Survey was designed to achieve desired data capture requirements and be suited to the intended recipients (all academics within H&E). The process of devising questions and response mechanisms (whether Likert or other) that were clear, unambiguous and appropriate required a refinement in my skills and knowledge through appropriate literature reviews and testing. Piloting was a sensible and useful approach, impacting on the final design. Several potential emerging interventions were identified, perhaps due to a combination of participant uncertainty of the various KT interventions available or a genuinely broad spread of priorities. This presented challenges for identifying the Cycle 2 intervention, but it also meant that any of the priority interventions could have been considered. The Cycle 1 Survey allowed for a very efficient and effective way of gathering data – with, of course, the caveat of any online survey in terms of participant interpretation, ability to use IT, assumptions that returns were completed by the person claimed etc. The data created can be lacking in depth and richness and the opportunity for the researcher to drill down further is limited. The built-in statistical analysis facility within SM was limited, so one has to download to an Excel package or similar. But the survey was appropriate in identifying possible areas of focus for the future Cycles.

Lack of pilot for Cycle 3 interviews and lessons learned

I believed that the question guide devised for Cycle 3 interviews was well-structured and appropriate and chose not to run a pilot. After the first interview, I realised that the guide needed improvements. This was disappointing, as the first participant's interview had to be brought forward. The participant was distinctive in her Department as having received a personal reward/incentive and it was disappointing to have to lose her data yet, in effect, she acted as the Cycle 3 pilot. A review of the question guide was undertaken and a replacement participant with similar traits had to be found. This demonstrated the need to follow basic principles, even when confident of the process.

Development of capabilities in use of interviews as a method of inquiry and NVivo

Significant personal development was required for the use of interviews and the process of achieving successful data capture, including the use of data analysis methods (NVivo). Within a short time, I progressed from draft ideas to undertaking in-depth interviews and subsequent interpretation. The relevant **Learning in Action** section has highlighted disadvantages in using a semi-structured interview approach, followed by analysis through NVivo. The semi-structured interview provided a framework leading to greater consistency of approach between participants, but was too restrictive and a more 'open' approach might have been

more beneficial. NVivo software was useful as an interpretation tool, but it is a highly systemised and mechanical approach which, in my opinion, layers a quantitative approach over a qualitative paradigm. For Cycle 3, open interviews with no prescribed 'guide' were considered but discounted, due to the need to ensure key issues were addressed. Openness was supported through the use of a number of prompts for each question and additional participant commentary encouraged. However, at times the interview process felt more like a survey. This was disappointing but perhaps inevitable, given the focus on specific research aims.

Managing the scale of data and creating transcripts

The level of data generated from the interviews in the form of recordings and transcripts was extensive, creating concerns for personal resources needed for transcription and the scale of coding within NVivo. One option was to code whole paragraphs of transcripts to shorten the process, again discounted as it could result in important data being 'lost' and seemed to suggest a level of pre-determination of 'themes' (categories). Alternatively, digital recordings run through a voice recognition system could automatically provide transcriptions for analysis in NVivo (Matheson, 2007). Discussions with learned colleagues at MU, and consultation with a leading proponent in the use of data capture via voice recognition, Professor Matheson (Colorado State University), led to this approach being discounted due to the complexities. The technology can only be 'trained' to record and transcribe the user's voice, so it required me to read aloud every transcript resulting in no time saving and adding another 'interpretation' to the data before full analysis. A senior colleague advised that voice recordings alone were difficult to analyse. With a printed text, one can contextualise a short part of an interview within the broader transcript, more difficult with recordings alone.

Reflections on the interview process, using Cycle 2 as an example

The interviews appeared effective with a style, approach and relationship development positively commented upon by participants. I compiled separate field notes of the interviews (Appendix 68) and some of the key process aspects that emerged were:

- none seemed outwardly affected by being interviewed by a Deputy Dean apart from one participant; in that instance, in the Dean's office on a different campus across a large table. This demonstrates the importance of a conducive environment
- the semi-structured interview guide allowed a consistent structure, but felt like an overly restrictive survey at times, despite using prompts

- initially I had intended to try a variety of different qualitative approaches, including participative observation, as a learning experience. However, the critical issue was to match research approaches to the research question. I also sought to gain some consistency of approach between the Cycles to aid the extraction of commonalities and the meta-analysis (as referred to by Zuber-Skerritt and Perry, *ibid*). For this reason, it became attractive to focus on one predominant approach (i.e. interviews) – building experience and knowledge (whether individual, group etc.)
- I believe I was able to apply my extensive knowledge, experience and skills of one-to-one meetings, including as a university coach, to the interviews successfully
- as in coaching, various verbal and non-verbal ‘tells’ that respondents demonstrated in the interviews added a richness to the verbal transcripts – stabbing a finger to the table to emphasise a point, leaning forward with a full stare, a long hesitation between sentences and looking away. Some of these were not fully reflected in transcripts. In further research, I would wish to consider visual recordings to augment transcripts
- reflecting on my performance, I had to focus on not leading the participant – this originated in a desire to become engaged in the conversation, together with pre-existing management relationships
- it was notable that valuable information was provided once recordings ceased, suggesting that valuable data might have been missed due to participant behaviour modification.

Cycle 3 – Sampling for ARG and Interviews

Over 30% of academics in H&E volunteered for either interviews or ARG in response to an open invitation. As I commenced preparations for a purposive sample of volunteers, a professor queried if she could contribute, given she was a recent recruit. A significant aspect of the AR research Cycles was to evaluate actions taken in previous Cycles so it was evident that only academics in post prior to May 2013 could be in the sample, as the R&IS was not introduced until that date. Those hired after May 2013 would not be able to reflect on the impact of the R&IS on their motivations to become engaged/further engaged in KT. Disappointingly, this removed potentially enthusiastic participants from the research but emphasised the need to match sampling regimes to research questions.

Issues in the use of group 'interviews'

Using the ARG1 as a comparison, I comment (in italics) against some issues that have been raised regarding the appropriateness of the use of group work summarised from Flick (2009), Fontana and Fret (2008), Bryman (ibid) and Robson (ibid):

- Each group can be highly individual so it is difficult to compare attitudes/opinions across groups and generalise – *the research itself does not lend itself to generalisation, but one hopes that meanings that emerged from the research will resonate with others in the field and provide contextual information and knowledge.*
- Groups can be dominated by individuals and/or sub-groups and the researcher should not take the silence of some individuals as having 'no opinion' – *there were those more actively engaged in the action discussions around the flipcharts and then as part of overall discussions. Participants felt more comfortable discussing and justifying their own thoughts whilst categorising the post-it notes than in the larger meeting environment. The facilitator did encourage all to participate. The NGT method itself actually reduced the impact of dominant characters and helped more reserved participants express their opinions.*
- Peer group development and pressure – Bryman (ibid) noted that peer groups can form leading to peer group pressure. *The sampling process should have restricted the potential for pre-existing peer group influence. I observed that there were at least two groups that emerged where participants appeared to be developing collegiate working and which may have had an influence on others.*
- There is a limit to the depth of topics one can cover due to range of opinions and time issues – *despite active discussion there was 'post-it note fatigue' towards the end of the second posed question. A future action might be to reduce the number of posed questions, but this needs to be balanced against the observation that some participants took time to 'warm-up'.*
- The logistics of getting several people together- *identifying suitable dates was challenging for very busy academic colleagues.*
- Conflicts can arise amongst individuals – *not an issue in this particular group, although there was healthy debate. There were disagreements about precisely which categories some post-it notes should be allocated to, but these were resolved through discussion.*
- The role (and skill) of moderator is vital as s/he must get views from all group members – *the highly skilled facilitator notably ensured that all were engaged in the*

process of categorisation and prioritisation. The voting arrangements within NGT allowed all to contribute to derived actions.

- The group itself can start to generate new data not addressing the issue and the researcher may lose control – *whilst important to maintain focus on the research question, in an AR context, deviation may have led to more productive avenues not initially identified by myself or the facilitator.*
- Bryman (ibid) also notes limitations of ‘focus groups’ in terms of integrity of data collection and analysis due to sheer volume of outputs – *the clear advantage in the use of NGT was that there is not an enormous range of recorded data that needed to be processed. The key point of the ARG was to use the technique itself to allow output data i.e. ‘actions’ to emerge. The categorisation of the post-it notes results in the record (meanings) from the meeting.*

The Use of NGT (in Cycle 3) for AR projects

NGT would appear to be highly relevant to the AR approach. Notwithstanding the noted common methodological issues one has to be aware of in group work (dominance of individuals, issues of subject sensitivity, potential intimidation, lack of confidentiality, etc), the participative nature together with the overall focus of attempting to reach democratic agreement on actions is a good fit with key tenets of the AR approach. Issues that arose were:

- whether participants need to be briefed for complex research questions. Participants were provided with background information, but it was clear that some had either misunderstood or not been able to absorb this
- identifying issues and then categorising as a process is not dissimilar to other forms of thematic analysis, the difference with NGT being that categorisation is achieved through group work. Inevitably this may give rise to a level of disagreement. An additional component could be the identification of outliers for further consideration rather than forcing these into categories that might not be entirely appropriate. Whilst important, outliers did not affect the main categorisations within my research and thence voting to any significant level
- there were several examples where postings were repetitious or the number of postings did not correlate with subsequent categories. NGT and AR allow for categorisation of data in a participative approach. Without this pseudo-democratic process an external researcher divorced from the process might be tempted to use the number of postings as a way of devising priority actions. The NGT process stimulates a

more equitable approach to gaining agreement between participants, ensuring their views are reflected in the final analysis and reflecting these directly in identified actions

- categories with significant numbers of ‘postings’ did not necessarily receive a higher share of votes. Participants were engaged in determining and then re-determining their priorities after consideration and discussion of the categories demonstrating personal learning during the AR process
- a particular attractive nature of NGT was the quiet reflection on a posed issue and the opportunity after discussion and debate to vote according to one’s own values, beliefs and priorities
- the use of individual post-it notes as proxy ‘quotes’ is viewed to be acceptable practice, as long as sensible precautions are taken in not overemphasising the representativeness of these posts and that they are used in context
- finally, priority actions within H&E may vary considerably for other Schools within MU. The nature of the academic provision within H&E is reflected in the priority actions related to the importance of the synergy between teaching and learning and KT, together with the ongoing motivation theme of enhancing/developing ‘practice’. This would also support the suggestion that different academic disciplines may have varying priorities for the types of KT activity that may be supported.

6.2.2 Approaches to analysis

Use of Minitab for quantitative comparisons

Whilst intended to be a census, the response to the Cycle 1 Survey resulted in a sample of H&E academics. To assess how representative the demographics of the Survey were, key personal characteristics (e.g., sex, length of service, etc) were compared with data of the same nature across H&E. I used Minitab for analysis. Inputting my data and the analysis developed knowledge of certain statistical descriptors – p tests and Chi squared tests. I found the concept of the null hypothesis testing to be challenging when applied to a practice research environment. Comparisons between the H&E academic population and the Cycle 1 Survey were undertaken to establish the representativeness of the sample. This was limited in relevance as overall H&E data were only available from the pre-2012 reorganisation period when the School (of Health and Social Sciences) had a different academic profile and data were incomplete. Unsurprisingly in some ways, relationships between the two were shown to be marginal or poor. Those responding to my research were perhaps likely to have an existing

interest in KT that was reflected in other UK research (Abreu et al., 2009). Nonetheless, given the strong correlation between the results and previous UK based research, together with personal tacit knowledge, I believe the results of the Cycle 1 Survey to have been valid in directing future Cycles.

Use of NVivo

NVivo was a powerful tool in assisting analysis, but not without shortcomings. Use of NVivo can result in the loss of contextual information and narrative flow of transcripts, once data is broken down and then re-constructed. I felt uncomfortable that a system designed primarily to deal with qualitative data almost drives the researcher towards a different research paradigm. Query and analysis tools seemed to overlay a relatively mechanistic and quantitative research approach to the evaluation process, particularly in terms of visual interpretations, such as bar graphs, word trees, etc. These can be useful in establishing themes emerging from the data and the reporting facility allows them to be pasted directly into a research report. However, this use of visual imagery can mislead interpretation and be based on a limited number of participant responses, or biased due to participant characteristics (in my research due to the predominance of senior academics in the interviews). The auto-coding function of NVivo was attractive as it allowed more rapid 'sense-making' of the data and could be adapted as data analysis continued, yet I found it pre-empted interpretation and was too restrictive, preferring to code-up from the data. One has to be careful about the weighting placed on the number of references to a node, as there could be significant repetition by participants (sources), and there is also the potential for overlap between nodes.

Analysis of Cycle 3 interviews did not involve auto-coding for interpretation of the transcripts. This should have led to a more open and flexible coding process but, in practice, the use of an interview guide and a focus on a consistent approach at interview led to themes largely dictated by the questions. Whilst not adversely impacting research outcomes, I should have liked to have explored an open interview process as part of my personal research skills development. The interpretation of nodes and sub-nodes was helpful in understanding themes emerging from the data. However, despite my best endeavours, I was conscious of the potential impact of one's own pre-existing tacit knowledge, experience and preferences in analysis. In both Cycle 2 and Cycle 3, the query and analysis functions of NVivo provided limited information. It was more useful to create memo documents for each coded category and to use these to draw out themes and subthemes – not dissimilar to a traditional 'cut-and-paste' approach. In effect, NVivo was largely a database and data management system, with

the ability to identify codings rapidly against specific categories (themes). Verification with a specialist NVivo academic confirmed my appropriate use of the tool-set. Indeed, she believed the memo approach had enabled significant meanings to be drawn out from the data.

This thesis contains a number of quotes from interviews. As Silverman and others have noted, this journalist style is disingenuous as a form of generalisation from the research. The number of sources and references attributed to a theme can provide authenticity of certain claims made within the research, as can the scale of coverage of the interviews and their transcripts within the analysis. But the use of quotes can only be illustrative and serve to add some life and dynamism to the research outputs.

Maintaining a focus of the research in action

Discussions with AR researchers emphasised the need to ensure that the evaluation of data generated from within the different cycles retained its main purpose, to inform the continuum of action within which the researcher is engaged/immersed. This is an important process and philosophical issue. Social science research is generally more interpretist; unlike in AR, the researcher often engages as a third person and, through interpretation, makes recommendations for others to consider. I have noted elsewhere the challenges I have personally faced in adopting qualitative research paradigms such as AR and my external consultant noted the level of analysis and focused interpretation I exhibited in evaluating the results from Cycle 2 and planning Cycle 3. It was this discussion about the purpose of AR at that point that enabled me to understand more clearly the need to look for the learning occurring during the research, which can be applied to actions leading to the implementation of change. This phase of the research helped me to understand discussions with Professor Coghlan, whose view was not to become too engaged with interpretation and to focus on the actions that emerge.

6.2.3 Emerging R&IS

Motivation for engaging with KT

In terms of enhancing KT activity, the following factors emerged:

- KT was seen as an important aspect of H&E's academic portfolio. However, it was clear that, when staff resources were tight, in terms of priorities, it fell behind teaching commitments and research. In many respects, KT retained its 'third stream' image
- Work Programme issues (lack of consistency, insufficient resource, time paucity, etc) had a direct impact on the level of KT that could be undertaken

- Motivation for being involved in KT varied enormously, from job security to personal satisfaction and ‘making a difference’ in society. Intrinsic and extrinsic motivators were present, varying along a continuum and reflective of an individual’s situation at any one moment (as found by Lam, 2011). Academics wanted to contribute positively to society and KT offered a route to achieve this. Some participants supported KT in providing income to meet other research and teaching objectives (the motivation not being KT outcomes *per se*)
- The results reflect and concur with those of Olmos Peñuela et al. (2013), that social science and humanities academic KT engagement seeks a contribution to a social good. This could be extended to health discipline academics. It was not clear to me whether the focus of academics on ‘people-based’ rather than overtly commercial outcomes was due to discipline bias or simply comparatively fewer opportunities than in STEM subjects
- A significant motivation was to enabling relationship and network building with external partners
- However, accepting these altruistic motivators, some academics also sought some form of direct reward, often pecuniary. Predominantly, this was expressed as a desire to receive ‘recognition’ and also, as part of that, a financial return to either an individual or team. A number of academics believed they should receive an extrinsic reward and indications from Cycle 3 suggest this may be influenced by the nature of the KT (i.e. more prevalent for clearly commercial activity)
- Academics required good administrative and process systems: giving advice and guidance in a timely manner and in a simple and less bureaucratic way
- There was a requirement for more guidance, mentoring and general support to enhance KT activity
- The use of commercial language alienates academics and is a key organisational risk of failure
- Some academics believed ‘competition’ for available R&IS funds was positive, perhaps preparing ECRs for the increasingly competitive reality of academic life.

Motivation for engagement as a result of the R&IS

From the Cycle 3 evaluation, participants clearly found it difficult to disassociate their motivation to engage in the R&IS from KT. As noted, volunteers for interviews may have had pre-existing interest in KT or experience, which can be a motivator in itself (D’Este and

Perkmann, 2011). Cycle 3 allowed for greater clarity around motivational aspects of the R&IS. Some similarities emerged as the motivators for engaging with KT:

- participants identified a clear difference between a reward and an incentive: incentives attracted academics to undertake KT and reward followed successful delivery
- fairness and equity of approach were significant
- R&IS can enable staff development, specifically in developing research profiles and ECRs. This emphasis on 'research' may have been influenced by MU's drive for an enhanced research profile during the period of this research, which in itself highlights the need for AR to recognise that drivers of organisational culture are not fixed and are temporal
- using the R&IS to directly enhance or develop external partnerships was a priority motivator, particularly when it enhanced access to practice learning opportunities. This was probably reflective of the nature of H&E's academic portfolio
- 'recognition' emerged as a key motivator, not necessarily financial, although the R&IS offered a direct and visible mechanism through budget allocations
- the flexibility within the R&IS to support broader academic objectives was a motivator
- enabling academics through the R&IS to 'make a difference' within society remained significant. But managers should be aware and respond to the issue that personal rewards remain a motivator for some, depending on personal beliefs and values and the nature of the KT undertaken.

Developing the R&IS

The R&IS emerged directly from the interpretation of the Cycle 2 data, devised and constructed from participants' responses as planned through the research objective.

Consistency was evident between the views of participants and recommendations from key authors in terms of the development of reward strategies. The R&IS reflected work of Osterloh and Frey (2000), D'Este and Perkmann (2011) and Lam (ibid), all noting the varying impacts of intrinsic and extrinsic motivators. My research concurred that academics do not primarily seek pecuniary reward, but wish to use rewards to support other academic objectives such as research profile building and improved relationships with clients and practice areas. However, some academics from all disciplines and areas are directly attracted by personal financial rewards. The participants in my research looked to KT and the R&IS to bolster achievement of their teaching and learning objectives as well as research.

Decision making on priority actions through an AR process may be more democratic and emancipatory, but it has a clear disadvantage in that expert opinion may not be available or expressed in the process. Whilst some of the participants were senior managers, none of the participants were highly knowledgeable in reward strategy management theories. This is an interesting dilemma as, despite the participatory nature, sometimes a researcher with management responsibilities may have to make decisions contrary to the AR priority actions identified, based on their understandings or those prevalent within the relevant management/discipline 'community'.

Has the R&IS created unhelpful organisational focus on specific goals?

Shields (2007) was concerned that rewards may impact within an organisation in focusing to specific goals at the expense of others. Developing the R&IS through an AR approach has enabled the recognition of both incentive and reward. Although based on a financial return, participants have directed the Scheme to enable investment in a broad range of academic activities and not KT alone.

Flexibility leading to variability in implementation

Departments could implement the R&IS according to their own disciplinary and organisational needs within an operational framework. This emerged from Cycle 2 and was essential to obtain buy-in. This positive aspect also brought significant issues in terms of the consistency of implementation in 2013/14 across H&E. Of the five Departments, two (Psychology: Mental Health and Social Work) ran open bidding processes for the allowances, managed through a selection process. The other three Departments ran a mixture of bidding and allocations based on previous commitments (Adult, Child, Midwifery; Education; London Sport Institute). This meant that an individual academic would potentially not have equal access to funding across Departments. The impact of this could be the subject of further research. In 2013/14, Psychology noted that few bids were clearly KT in nature, itself disappointing and compounding the fear, stated elsewhere, that research bids would dominate. As a consequence, the Department decided to ring-fence allocated funds to a further, KT specific bidding round.

6.3 Premise

This section offers a critique of some of the underlying assumptions and foundations of the AR thesis.

6.3.1 Changing culture of MU and resulting restructures

The impact of University restructures on my role

During the research MU has undergone several restructures. In the summer of 2012, six smaller Schools were formed from four larger originals. Significantly, a renewed corporate plan sought to improve MU's research profile as a core priority. I was required to apply for, and be assessed against, a new role within MU, that of Deputy Dean. This was a significant role change from Associate Dean Business, where KT had been at the core of my remit. The restructure changed the academic disciplines within the new School of H&E with Natural Sciences and Social Policy-based KT moving to other Schools, and Education joining.

In early 2014, MU introduced a reformatting of the academic roles and profiles so as to better reflect future teaching, research and KT objectives, with particular emphasis on research skills and related outputs. All academics were required to map themselves against these new job roles and person specifications. These significant changes introduced a research and practice route through the various grades including a new Associate Professor level to replace Reader/Principal Lecturer. Following the mapping exercise, a decision was made by the Deputy VC, Academic, to reposition Psychology and Sport, transferring these Departments to the School of Science and Technology. These organisational changes created significant anxiety amongst H&E academic staff, including uncertainty for job security and, in some cases, doubts about the future of the School itself. These reorganisations impacted on my research in that the 2014/15 R&IS could include neither Psychology nor Sport Departments. My suggestion of some form of continued involvement of those Departments in the R&IS was not accepted, even as an interim measure.

Impact of restructure on culture

Whilst MU had previously promoted selective research excellence, the change in corporate direction to a greater research focus had an impact on the attitudes, behaviours and values of H&E academics largely predisposed to delivering programmes leading to professional recognition, often with limited research profiles. Many H&E academics had built successful academic careers with teaching at the core which, whilst remaining vitally important, appeared to be no longer centre-stage. This resulted in significant cultural shifts and some academics feeling vulnerable (e.g. Directors of Programmes who had built reputations on academic management, not research). This was not aided by a concurrent audit of academic activity in which the circulated pro-forma did not recognise teaching input. An extended VR Scheme in between 2012 and 2014 attracted a number of experienced senior teaching-based staff. This

had a significant impact on overall motivational direction. The loss of Psychology left H&E with a leading professional practice profile but a limited research culture, which it continues to address. KT appeared to have strengthened within the new academic direction, but more closely aligned to research. My relationship with academics within the new H&E remained strong, with management structures and many leadership positions unchanged. Initially, in 2012, I knew little of new colleagues in the Education discipline, and vice versa, requiring the building of trust and understandings. Notably, significant numbers of Education colleagues volunteered as participants for Cycle 3 ARGs and interviews.

The results of the ARG are reflective of the organisational environment at the time it was undertaken, and I believe the evaluations need to be viewed in the context of these highly significant changes in the academic culture of MU and the impact on staff within H&E. ARGs and interviews in Cycle 2 and Cycle 3 were undertaken at periods of significant uncertainty. I postulate this is reflected in the prominence of research as a motivator for KT as an alternative approach to achieving research focused ambitions. An example was the use of income from KT returns used to support re-allocation of Work Programme hours to enable more research.

Flexibility in the use of AR to cope with these fundamental changes

Improving KT outputs remained a priority within MU's restructures with a notable shift to enhance the synergies with research. I believe this was intensified due to the focus on impact case studies for the Research Excellence Framework (REF). Organisational changes could easily disrupt a longer term research project. A professional doctorate such as the DBA is well placed to both survive and perhaps benefit from change, provided there is the capacity for flexibility and absorption/adaptation. The AR approach particularly lends itself to the ever-changing workplace. As the longer term AR doctorate is constructed of various cycles, the researcher can respond *within* those highly reflective/action based cycles and those changes can determine the cycles themselves. A broad research objective might be set at the commencement of the research, but the insider-researcher may need to respond inductively to change pressures and AR is entirely suited to support that requirement. Indeed, AR can revel in this messiness. Some (Brydon-Miller et al., 2003, p.21) believed messes to be "exciting". Cook (2009, p.7) suggested this landscape to be a "forum for the exchange of perception and beliefs, a place of co-construction", in my view a potential catalytic miasma of change where new knowledge and learning can be created and where AR can derive meaning.

Knowledge and understanding of KT

Within this section on culture it is appropriate to note that within Cycle 2 and Cycle 3 research I was surprised by participants' limited knowledge of KT, particularly being members of a School that dominates MU's KT activity. Whilst not impacting on my research outcomes, it illustrated the hazards for the researcher in making assumptions about tacit participant knowledge and understanding and demonstrated an on-going staff development need.

6.3.2 AR 'positioning', practices and approaches

Reflection on the various philosophical positions in AR

AR is often aligned to a critical realist if not critical theorist positioning (see Appendix 2). Given that AR involves research within social situations where actions are created within it by participants, the approach fits a constructivist research paradigm well. Theory is generated through practice and is often focused on achieving positive social change (Brydon-Miller et al., 2003). To be able to understand a particular situation fully one has to be immersed in it. However, AR deviates from critical realism and theory in that a specific aim is to intercede in a situation, hence the term 'action'. In this way, the insider Action Researcher is an interventionist (Coghlan, 2007). There are variations of paradigms in AR. Coghlan and Brannick (2010, amended in 2014) discussed AR in 'scientific' terms that seemed to sit uncomfortably with constructivist foundations. Coghlan (2003, p.452) stated:

“the key idea is that AR uses a scientific approach to study important social or organizational issues together with those who experience these issues directly.”

Yet others such as Koshy (2010), McNiff and Whitehead (ibid) expressed clear views that the methodology is firmly constructivist. Koshy referred to Lincoln 2001 (p.130) and suggested:

“much of the epistemological, ontological and axiological belief system is the same or similar, and methodologically, to constructivist's and Action Researchers work in similar ways, relying on qualitative methods in face-to-face work, while buttressing information, data and background with quantitative method work when necessary or useful.”

The use of such paradigms for AR, the consequent type of methods of enquiry used, and the basis of the action within a set environmental context of personal professional practice, means it is inappropriate to derive transferrable research outcomes. McNiff and Whitehead (2011) stressed that, whilst researchers themselves benefit from an AR approach, it is in collaboration with others in a social context leading to positive change. Burns (2010) focused on AR in a

systemic way, viewing the process and methodology as transformational – supporting wider social change agendas. This is similar territory to Zuber-Skerritt’s ideals (2009, 2012), where AR is used for social good, an emancipatory research approach for the communities affected, more recently proposing that AR is highly suitable for research in support of sustainable environments.

How participative does AR need to be?

During the transition from Cycle 2 to Cycle 3, I noted the concern of my external consultant on the level of participation in my work, particularly in using the individual interview approach. I had also read Zuber-Skerritt’s ode to AR (2009), proposing that AR has to be highly participative to be transformational. This led me to consider how participative is participation, and whether personal interviews can be used as a tool to support an AR approach. To put this in context, AR has been described variously as:

- a collaborative democratic process (Coghlan and Brannick, 2014)
- where the researcher is an active participant, working for, with and on behalf of participants (Zuber-Skerritt, *ibid*)
- participative and collaborative with interpretation by participants (Koshy, *ibid*)
- “a participatory, democratic process concerned with developing practical knowing in the pursuit of worthwhile human purposes, grounded in a participatory worldview. It seeks to bring together action and reflection, theory and practice, in participation with others, in the pursuit of practical solutions to issues of pressing concern to people.....etc” (Reason and Bradbury, 2001, p.1)
- emancipatory and involving public participation (McNiff and Whitehead, *ibid*).

Coghlan and Brannick (*ibid*) stress the collaborative nature of the research process itself as an important differential from other research approaches involving ‘members/participants’ rather than ‘subjects’. There are underlying socio-political interests that determine how an individual researcher or author engages with AR, perhaps most strongly illustrated by Burns in his interpretation of systemic AR and its role in community decision making (Burns, *ibid*). AR’s application and the active participation by all stakeholders has obvious advantages for large-scale significant social and physical infrastructure project consultation processes. The transformational and emancipatory potential of AR has become the most fundamental aspect for a number of protagonists and this is often expressed in highly committed, often emotive, language.

A core principle of AR is research is undertaken 'within action' and that the researcher, probably a practitioner, is seeking to improve or enhance practice. One is clearly developing praxis whereby benefits could be experienced by the researcher and a wider community. Given that AR is research *within* the action and not *about* the action, the researcher is a participant themselves rather than a dispassionate observer of subjects. If researching practice within one's own organisation, there could be advantages in engaging colleagues in process change. Researchers in organisational change emphasise the need for co-joint dialogue with employees (Armstrong and Brown, 2006). Thus it could be proposed that the introduction of an incentives package will only be successful if employees are engaged with that policy development (Reilly and Brown, 2008). The principles of engagement and involvement of those impacted upon by the research are clearly critical to a successful AR research project. Some researchers value the co-learning element of AR. As Winter and Munn-Giddings (2001) have suggested, a key positive aspect of AR is the learning experience within the process itself, rather than just problem solving, adding value in certain social settings.

But what should be the extent of that engagement within the methods of inquiry of an AR project? As noted in Appendix 2, the 'family' of AR (Coghlan and Brannick, 2010) includes a variety of different research approaches, the level of participation varying considerably. In *classical AR* (where the researcher is acting on behalf of a client) or *clinical inquiry* (the professional assisting clients), participation could be very different than in *participatory AR*, with community members empowered in the research outside the control of the sponsoring organisation, or *co-operative inquiry*, where participants are co-researchers. Cornwall's six forms of 'participation' (Co-option, Compliance, Consultation, Co-operation, Co-learning and Collective action (Cornwall, 1996, as found in Welsh Assembly Government, 2003), reflect wide variation in the degree of participation. The level of participant involvement in the derivation of meaning and theory construct varies significantly within the AR 'family' and there is no single accepted definition or view on levels of participation.

Participation does not necessarily mean participative and its nature will be influenced by a number of factors: resources; client specification, particularly logistics; insider-researchers' role/relationships, etc. But from an academic perspective the research objectives will determine the level of participation expected, together with the use of methodological approaches comfortable for the researcher. In my position, I also have the dual practicalities of seeking an overall strategic objective (to enhance engagement with KT) and the realities of what can be achieved within a resource envelope. The AR might lead to actions that are not

acceptable to the organisation, although not an issue in my research, as the ARGs had realistic expectations. Actions have resource implications whether directly for budgets (e.g. R&IS allowance available) or work programming to support KT. It would be defeating the process of AR if resulting actions were not enacted, but there are potentially limits on achievability meaning perhaps compromise/adaptation.

In Coghlan's (2003, p.454) differentiation between mechanistic and organistic AR, the former is directed at problem solving of a pre-identified issue, engaging with members of that organisational system, whereas the latter is an approach where:

“the participants themselves engage in an action inquiry process in which inquiry into their own assumptions and ways of thinking and acting is central to the research process.”

This may be a rather academic differentiation since even mechanistic AR aims to engage with communities in an organistic fashion through approaches that may raise questions about cultural norms, attitudes, beliefs and perhaps subversively question ‘the way things are done round here’. This thesis focuses on a specific objective forming the context within which the organisation has offered support. There are tensions between the objective of enhancing engagement with KT and the emancipatory opportunities offered in the process, and I have felt that the overall organisational objective has imposed boundaries. The individual interviews within Cycle 2 and Cycle 3 were participative in that there was participation in the process. Participants actively engaged in the development of the R&IS and the embedding process through their direct influence. Increasingly, researchers are recognising the participation derived from interviews:

“There is a growing realisation that interviewers are not the mythical neutral tools envisioned by survey research. Interviewers are increasingly seen as active participants in an interaction with respondents, and interviews are seen as negotiated accomplishments of both interviewers and respondents that are shaped by the contexts and situations in which they take place.” (Fontana and Fret, 2008, p.144)

The research was based in action, sought to directly effect change in practice and to derive meaning (theory) from engaging with protagonists of that practice, and was based in a social science milieu. These reflections did, however, lead to a greater level of collective participation within Cycle 3 through the ARG.

Using the ARG and NGT to develop an enhanced level of participation to the AR project

Participants were reluctant to engage during the AG1 introductory phase, interacting little with the facilitator despite clarity on confidentiality and anonymity. Many individuals had not previously met each other as H&E was large and disparate, leading to possible feelings of insecurity and anxiety. The group was also larger than predicted and, although sitting in an informal semicircle, there was significant distance between some participants – hence feeling like a formal seminar. The NGT process commenced with private reflection and noting responses to posed questions, a vital part of the process particularly for those who may not be familiar with the subject matter, but it meant there was little early interaction. However, as participants warmed to the task and contributed to the flipcharts, interaction developed markedly with much debate and laughter. Reforming the ARG, the facilitator assisted participants to categorise their responses. Few voiced opinions on the suggested categories but, importantly, each individual could then approach the board and contribute to categorisation. The second posed question led to far more active discussion. Participants were now more familiar with the process and confident in working together, but it may also have been that the embedding process was simply more engaging than the motivation issue. This is illustrated by an ECR commenting on the ARG:

“It was a very interesting session – I've never been involved in anything like that before, on either side of the research fence. I thought it went really well – we were all a bit slow to begin with as we got our heads around the process in the first exercise, but then you could see the difference with the second exercise. It's a great way to get people actively involved, and discussing the different points made, and coming to a consensus as to what the general themes are. The facilitator was also great in the way she managed the ARG, and in her friendliness and warmth!”

This process was highly democratic in that there was debate on the formation of categories and a voting process to agree priority actions. Some participants were more vocal and demonstrative regarding categorisations and codings of post-it notes, but the process allowed all individuals to become engaged and gave a voice to less strident individuals who might not have been heard in other group interview techniques. The voting system also allowed for everybody to have an equal opportunity to determine priority actions. Despite the briefing, I noted that some participants had not realised the significance of the ARG in that they were determining future School priorities, raising integrity and authenticity issues. It was sobering to

reflect that, as a senior manager, I was committed to enact the actions identified and accord priority to how they were devised.

There was significant learning within the ARG in a supportive and creative environment. Participants learned about the process of NGT and enhancing KT, working collectively as the priority categories were devised. That community understanding and learning was a significant by-product which was not originally planned, and could be harnessed as an approach in many other decision-making processes, particularly to support organisational change where communicating, engaging and developing staff are often key determinants of success. The ARG process also assisted in providing me with learning that could then be used for the personal interviews in directing questions to issues that had emerged – an example of the highly inductive research process that is AR.

Ongoing role of the ARG in change management

There is a need for ongoing guidance and mentorship within the discipline areas. Departments have identified KT 'leads' or champions expected to develop, enhance, supervise and guide KT activity in a proactive and constructive way. Continuing the ARG could assist H&E in developing its KT profile. This would also provide an ongoing, supportive 'critical friend' for my role as a further legacy of the DBA. AR is recognised as useful in engaging employees in the process of change and my experience would support this. Interviews and the ARG engaged 'participants' as part of the change management process and were instrumental in it. Such processes of investigation allow a re-interpretation of data from a variety of perspectives to aid meaning-making (Fletcher and Zuber-Skerritt, 2008).

Reflections on Zuber-Skerritt/Perry AR model for a doctorate

The model provides a useful base for AR doctorate studies. Participants are engaged within the research process as part of core AR cycles, yet the thesis component and writing-up within the model were undertaken independently by the researcher. This contradiction may suggest that participants could, and perhaps should, be involved in the whole process, even though it is a project towards an award. This participant verification process might be particularly important for ethical and authenticity issues (Bryman, 2012; Coghlan and Brannick, *ibid*). Gelling and Munn-Giddings (2011) suggest that participant feedback is a useful part of authenticity (validity) testing.

6.3.3 Methodological reflections

Use of qualitative techniques in AR

Coming from a more scientific, semi-positivist background, it has been a significant learning experience for me to be immersed in more relativist approaches that have challenged my personal paradigm position. At the early conceptual stages, it was important that the project did not evolve as a series of evaluative reports and that theory emerged as part of the research – exploratory rather than confirmatory. Personally, I felt unease that such approaches limited causality or antecedence claims. This did raise personal issues as to how useful AR could be in this context for developing evidence based policy and practice. Initially, I felt the need to fight constantly against my urge for a more positivist, ‘hard-wired’ approach and had to grow comfortable with meaning emerging inductively with no hypothesis to relate to. My external consultant suggested my analysis of Cycle 2 might be a too interpretist in prioritising constructing and interpretation rather than learning and implementing change. I queried this, as Cycle2 had led directly to the new R&IS and the debate emerged as to whether the analysis served to form actions with AR rather than being descriptive of the data itself. Questions also arose in discussions with my supervisor as to how a DBA panel would respond to a qualitative-only research project. This led to some elements of quantitative evaluation, but these are entirely appropriate within the overall AR approach.

How sound is the use of interviews?

Professor Silverman’s October 2012 presentation at MU queried why interviews seem to be the default methodological tool of choice for most qualitative researchers when ethnographic approaches might be more appropriate, reinforcing that the method of enquiry should be appropriate for the research question and participants. His view was that interviews did not give the depth that many claimed. He was particularly concerned by the use of quotations, which he accused as being often of nothing but journalistic value. Professor Silverman appeared not to be supportive of interviews and seemed to be questioning some of the base tenets of grounded theory and thematic analysis. I thought this a rather odd position, as ethnographical approaches can use grounded theory and researchers will probably use a form of thematic analysis when making sense of field notes and recordings. The presentation did underline the need to be able to justify methods of enquiry and the use of interviews within Cycles 2 and 3.

Mixed methods and pluralist approach to research

Attendance at a research symposium organised by the Institute of Work Based Learning on mixed methods as a paradigm for research investigations resulted in interesting debate on whether this was possible, or whether phenomenological and reductionist approaches were

incompatible, reflecting the 'paradigm wars' of Gage (1989). Both have limits in their interpretation of the meaning of knowledge and this is perhaps a war that nobody can win. The speaker (Dr Stephen Goss from the Metanoia Institute) suggested a multi-method research approach that attempts to use different methods as appropriate to the research question and enable triangulation of data. But there are real issues in mixing methods, as the basic epistemological positions and even ontological position may be at variance,

"Creatively and effectively combining multiple methods is time consuming and difficult... it can be risky. In my experience, research committees prefer those candidates with mastery of one method to those with mere facility in multiple methods. Poorly executed research may end up pleasing no one." (Wittenburg, 2007, pp.10-22)

In my own research, it can be challenging to switch between paradigm positions in a larger research project. Goss proposed 'pluralism', which he suggested could mediate between positivism and constructivism (realist/relativist), achieving greater value in addressing research questions. Goss uses a model with both 'sides' reviewing a research objective from the 'other's' perspective – the aim is to find common understandings. A real issue that emerged was the practical implementation of such thinking and the limited evidence base.

It had been intended to use certain aspects of MU's Client Relationship Management System to assist in providing some quantitative triangulation data for evaluations of Cycles. However, this was not possible as the system had fallen into some disarray. H&E received management performance data from the RKTO but it was limited in scale and depth. As a result of input from the DBA, this data set has now been revised and will incorporate a range of performance information supporting all Schools, but will not be available until 2015/16. The comparison of SM participant sample characteristics and those of the School demonstrated the paucity of information available, which has now been revised to provide more evidence of wider impact of the DBA.

6.3.4 Reflections on the Doctorate nature of the research

Refining the Doctorate-level nature of the project

Within content of this meta-analysis, the transition between the various Cycles allowed reflection on the main objective of the project which became focused on the development and evaluation of the R&IS. This reflection also allowed for contemplation of the AR process within a professional doctorate context. Each individual Cycle resulted in actions that addressed the

'client's' (my employer's) needs. At the meta-level, the application of the Mezirow/Zuber-Skerritt and Perry/Coghlan combined conceptual model allowed me to develop meanings (theories) on the practice of AR utilising the Content/Process/Premise evaluation framework. Whilst the development of an R&IS emerged as the project focus, there were other interventions that could have been addressed yet personal time and organisational resources did not allow. An assessment of their overall and comparative impact would not have been possible in view of the DBA's structure. A managed series of AR projects could have achieved this, although one must recall that the thesis is equally about my practice as an AR researcher and meanings and knowledge gained as a result.

The conceptual model worked well in being able to build reflection within each 'project' Cycle and then to reflect further on this for the meta-level thinking and theorising. The approach to undertake the meta level reflection contemporaneously with the core Cycles was wise, at it supported theory arising organically rather than in some form of retro-fitting that may necessitate the researcher looking back through a haze of memories. However, this required a regimental and rigorous approach to writing up reflections. I would propose that the full cycle of reflections suggested by Coghlan and Brannick (2014) at each stage of the AR Cycle becomes far too onerous and could be streamlined.

The research serves a number of purposes, described by my supervisor as the 'layers of an onion' – the core as learnings for myself, the next layer as learning for the School/University and the outer as learning for the wider community – that is, the contribution to praxis. Coghlan (2007) referred to this as first person practice (learning of the individual researcher), second person practice (learning by those involved in the research) and third person practice (contribution of the work to the wider community).

Embedding reflection

As part of Cycle 2 reflective practice, I realised that too much focus was being placed on the 'project' AR Cycle outcomes at the expense of meta-level reflection issues. Cycles were proceeding well, but it was healthy to reconnect with some core principles of AR theory and revisit the original conceptual framework. I maintained a logbook throughout, but the **Learning in Action** sections allowed me to extract core issues regarding the AR process and overall research aims at a meta-level. The doctorate student engages in reflections upon reflections, leading to actionable research and a greater contribution than problem-solving (Coghlan, 2007; Argyris, 2003). This was a significant moment which, as a doctorate level researcher, engaged me in the process of reflexivity.

The uses of tense in reporting AR

Academic papers reflecting research outcomes on the application of AR are generally written in the past tense, as they describe an intervention that has had some impact, or that is being reflected upon. Even for research where the process of impact may not be complete, it remains common to use the past tense. However, in AR where the predominant focus is and should be on the resultant actions within the research (rather than of the research) this poses a dilemma. Because the writing-up processes is in itself part of that ongoing and dynamic scenario, it therefore could be argued that it should be written as a journal in the present tense.

Individualism v collectivism

I also have some issues in 'claiming' the findings/outcomes of this research on a personal level. Inevitably the research has to be assessed on a personal level due to the needs of examining the doctorate, leading to what Klocker (2012, p.155) describes as "cognitive separation", but it originates from a more collaborative, participatory approach and should be 'owned' by, and be recognised on behalf of, all participants.

A personal ongoing paradigm 'skirmish'

As noted, my academic background, teaching and research has been based in a largely objectivist/realist tradition. Within my professional career I have applied scientific knowledge within a social context of improving the health of communities. Involving social interaction around public health issues in practice is reflective of Johnson and Duberley's (2000) interpretation of a 'critical realist's' approach. There is understandable value in forming academic theoretical perspectives, but real world problems do not fit neatly into research taxonomies and categorisations.

Lake (2011, p.465) referred to scholars organised into academic sects "that engage in self-affirming research and then wage theological debates between academic religions" and further suggested in that same paper that each theology then asserts its "universal truths and virtue" (ibid, p.466). Most funders expect research outcomes that can be applied in practice, particularly in demonstrating impact. I am drawn to those who are un-aligned, choosing the most appropriate research paradigm for the issue. Lake (ibid) believed that the research community needed to collaborate to focus on the most appropriate epistemological approaches for the key complex issues society faces. Klocker (ibid) noted that there are those that see a clash between academic culture (individualistic, outcome focused, time-line driven) and participatory AR (collaborative, process-focused, time-intensive) and how this could

impinge on the acceptability of AR for doctorate research. I have followed the concept that one should use the most appropriate research approach for the issue under consideration, resulting in mostly qualitative design, relying predominantly on a form of induction rather than a reductionist, deductive positivist positioning. I have enjoyed discovering new research paradigm worlds, but not without some struggle. The desire to test against a pre-conceived idea has remained and, at times, has required reflective practice to stay on-track. The process of AR amplifies these deliberations as one commences on a journey that is likely to be redirected to a destination one had not expected. It requires a strength of conviction and tenacity, which has been a significant learning experience. In particular, there is significant personal learning to be developed from engaging in participatory AR, possibly outside of the immediate work relationships and not connected with organisational objectives. In Appendix 2 I have noted the zeal with which some researchers approach the emancipatory aspect of AR and appear to revel in the differences from other relativist paradigms. Whilst AR can clearly be transformatory, I believe it is appropriate to guard against 'preaching' as to what is good or authentic AR. Klocker (ibid) notes that Maguire (1993) warns against pretentious rhetoric and that, if AR is run rigorously and appropriately, it is meaningful if it brings about social change.

6.3.5 Evaluation of impact within an AR project

The practice of undertaking action and reflecting upon this within AR is in effect a form of live evaluation (Winter and Munn-Giddings, ibid) and research rigour should not be assessed using conventional criteria (Klocker, ibid). Winter and Munn-Giddings (ibid) refer to Parlett and Hamilton (1977) in suggesting there are two kinds of evaluation:

- traditional evaluation, where there is an assessment of outcomes against pre-specified criteria-commonly found in quantitative research approaches
- that which is part of an ongoing chain of development within the research most commonly qualitative and based in a practical context.

These mirror the paradigm differences between relativists and realists. Where the realists might see evaluation as a product, the relativists may focus more on the process. AR leads to research design that evolves over time through engagement with the participants (Reason, 2006). It is a continuing process where there may not be any answers to specific questions. It may help to contribute to the advancement of practice, but it is as more about developing an "effective community of enquiry" (Reason, ibid, p.193).

It is suggested that, within AR, constant reflection and research within the research leads to developmental 'illuminative evaluation' (Parlett and Hamilton, *ibid*). AR aims to improve practice (the action part) and participants' understanding, learning, insights and new knowledge as practical theory related to their workplace (the research part) (Fletcher and Zuber-Skerritt, *ibid*). This results in formative evaluation within the project, aiming for continuous improvement rather than reaching some form of final conclusion against set objectives and intended outcomes. This is termed a second order research approach in that research is meaningful and impacted-upon by those engaged with it (Meynell, 2005).

Fuller (1996) suggested that evaluation in AR needs to reflect the complexity of real-life research in practice, aligning with the constructivist approach whereby the researcher constructs the reality through the AR process itself, "Knowing-in-action is of a quite different nature to knowing-about-action" (Reason, *ibid*, p.196). AR provides additional insights from being engaged and involved with the community in the research rather than as an onlooker. Stenhouse (1985) suggested that evaluation in AR is not the traditional form of establishing a 'verdict' against pre-set criteria, but is actually about finding the basis for future developmental work:

"That developmental work is based in a particular context and therefore needs to consider more a dossier of evidence representing the case as a whole and not the abstract, fragmented statistical 'results' generated by experimental trials." (in Winter and Munn-Giddings, *ibid*, p.47)

Winter and Munn Giddings (*ibid*) highlighted research examples where the evaluation within an AR context is the process of continued refinement of the programme rather than an assessment against previously established criteria. By engaging the participants, evaluation takes on a different form as part of a democratic and collective process. The process of enquiry is as important as the original project research question outcome.

7.0 Assessing the Impact of the Research Project

This chapter examines the sources of data relating to project outcomes that may provide an indication of the impact of the R&IS.

The use of interviews, the ARG, reflection on literature and approval through the RKTC allowed evaluation of the R&IS development 'within the research itself' and there is no concluding evaluation phase, as there might be in other forms of research. It is inappropriate to consider an AR project as a linear process with a definite ending (Klocker, 2012), even in the context of a time-limited doctorate. The AR process will continue beyond that point with my active engagement. The ultimate evaluation is to judge the value of the project to the participants and the organisation (Fletcher and Zuber-Skerritt, 2008). Most flexible research approaches do not necessarily have a simple input/output evaluation model (Robson, 2011). This form of research cannot be compared with traditional, realist or positivist approaches, nor can it be assumed that there will be some simple form of empirical, numeric indices with which to judge 'success'. It could be argued that this is particularly the case for AR projects where the key focus is on the development of actions (including learning) emerging from within the research of value to participants. External observers would have to be fully cognisant of this in considering an independent evaluation.

An assessment of the introduction of the R&IS cannot be simply measured in terms of one or two convenient outputs; it is far too complex. Engagement of academics in KT will be dependent on numerous factors, particularly over the life of a DBA project. Policy changes, resources allocations (particularly staff), structural changes etc. can all have a direct impact from within the organisation. The lifetime of this project has witnessed two significant organisational re-structures, a re-focusing of the corporate academic philosophy and changes to academic role profiles. Additionally, there are significant external impacting factors, such as justifying impact due to research funding, policy impacts from the Witty report (BIS, 2013). The introduction of the R&IS has to be considered in the context of these internal and external 'drivers' of change.

7.1 Evaluating impact through financial data

Whilst not accepting the premise that quantitative data can fully demonstrate impact of the R&IS, some indices may provide contextual value. MU's RKTO has provided specific requested data that may indicate the impact of 'actions' undertaken within the research. Initial baseline data shows KT

activity levels within Departments using income levels as a proxy. This has limitations as many KT activities would not have led directly and immediately to income. In addition, most impacts of the R&IS action would take considerable time, perhaps years, before witnessing income generation. Measurable financial performance variables include overall contract values. The financial performance of the School for the financial years 2011/12 to 2013/14 is provided in Figure 21. Caution is needed as the figures for 2011/12 included the Department of Natural Sciences, but not Education. This demonstrates that there has been growth in KT revenue over this period.

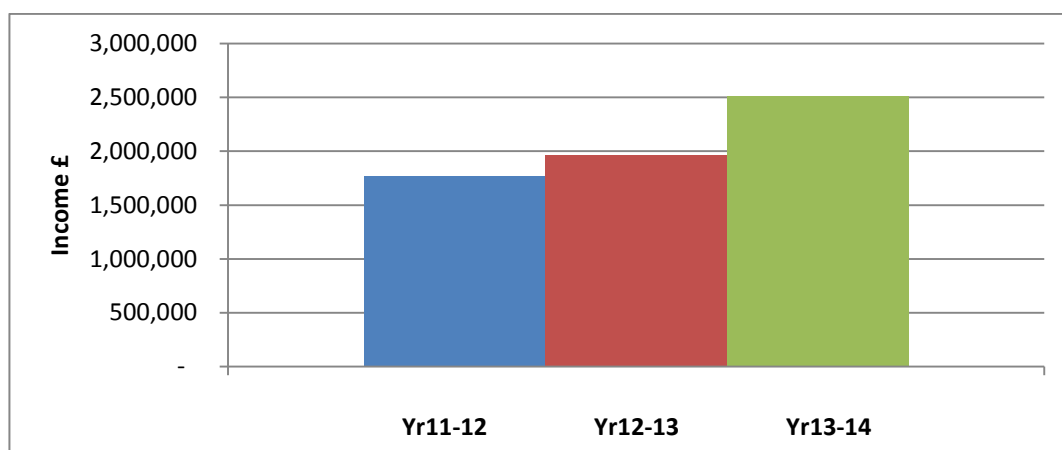


Figure 20 School level income recognised between 2011/12 and 2013/14 academic years (excluding MISIS recognised income @ £1.7m)

Figure 22 demonstrates that, apart from Sports, income levels grew over the period of the introduction of the R&IS, particularly in Education, Psychology and Mental Health, Social Work & Interprofessional Health (MHSWk).

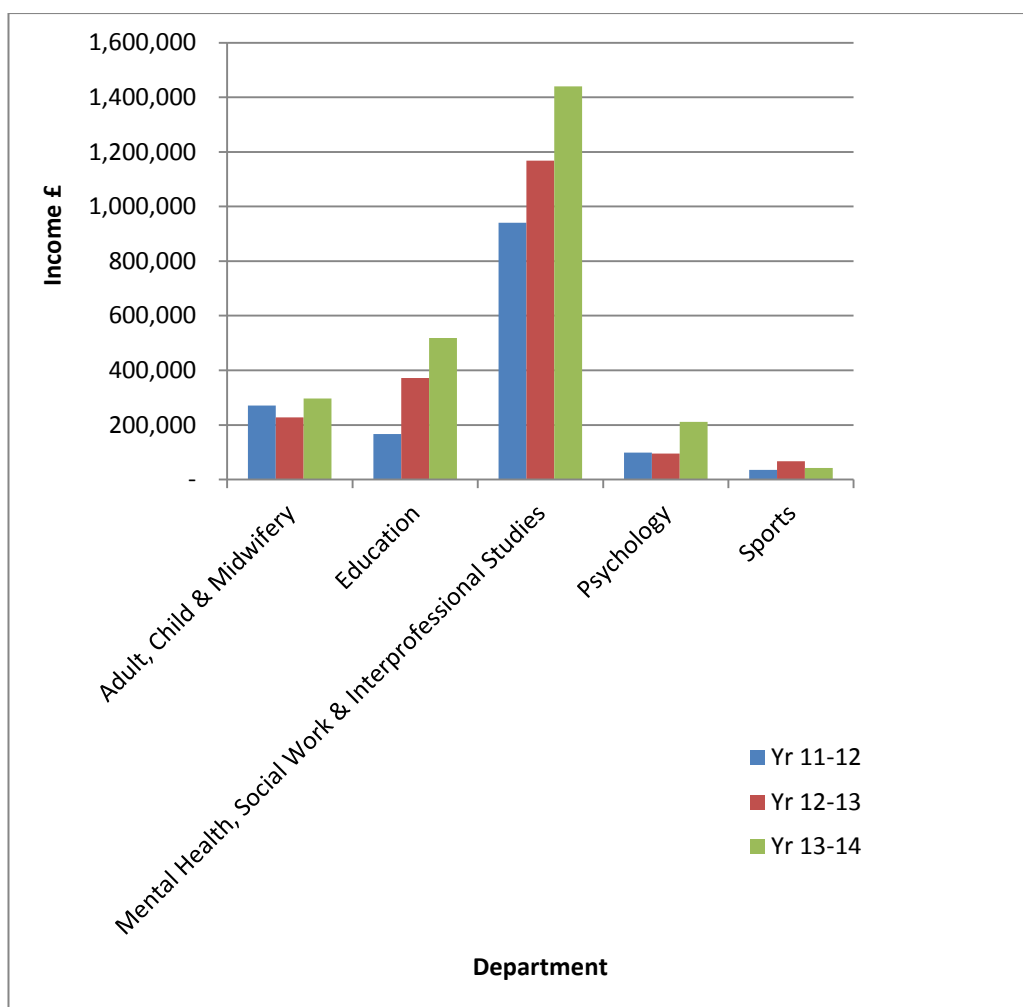


Figure 21 Income recognised by Departments within the School of H&E – 2011 to 2013/14 academic years (Excluding MISIS recognised income @ approx. £1.7m)

7.2 Evaluating impact through the R&IS bidding process

An alternative evaluative approach is to consider the number of bids and value of bids made to the R&IS by Departments since its introduction in the academic year 2013/14, as shown in Table 10.

Where possible and where data is available, a comparison was undertaken between the number and value of bids made to the R&IS within each of H&E's Departments, 2013/14–2014/15. This was challenging as not all Departments kept records of bids made for the initial stages of the introduction of the R&IS and the London Sport Institute (LSI) allocated funds without a bidding process for 2013/14. More limiting is that LSI and Psychology, the latter a significant past 'user' of the R&IS, were no longer part of H&E for the year 2014/15. Psychology's new School, Science and Technology, chose not to accept a transition period

proposal protecting the R&IS allocations, although at a later date I was asked to provide information on what they would have been allocated so that this could continue. In my view, this illustrates the impact of the R&IS on Psychology, in that they wished to continue the process independently of belonging to H&E. Table 10 illustrates two factors:

- it is perhaps too early to judge on the basis of bidding rates for the R&IS funds, although overall values of bids have increased markedly
- there is evidence, supported by confirmations from the HoDs, that Education and Adult Child and Midwifery are focusing on funding larger, more sustainable projects whilst MHSWk retain a focus on 'small project' funding.

Table 10 Bids made for R&IS allocations 2012-2014

Department	2013/14	2014/15
Psychology	KT – 11 bids @ £18000 Res – 20 bids @ £53,576	No longer in H&E
MHSWk	KT/Research bids – 24 @ £53,200	KT/Research bids – 36 @ £80,000
Adult, Child, Midwifery	KT/Research bids – 32 @ £61,853	KT/Research bids – 15 @ £72,000 (note decision taken to support larger bids)
LSI	No information available	No longer in H&E
Education	KT/Research bids – 24 @ £10,692	KT/Research – 21 @ £58,909

7.3 Evaluating impact through a further online survey

Despite my reservations on the value of measuring the impact of the project through quantitative approaches, as outlined at the beginning of this chapter, a further online survey using Survey Monkey was designed and distributed between 6th November 2014 and 4th December 2014, with specific questions relating to the introduction of the R&IS and its impact on enhancing engagement with KT (details of the survey can be found in Appendix 69). The impact survey was designed with predominantly closed questions, but allowed the opportunity for narrative-based responses where appropriate. This online 'impact' survey was sent to 120 academic staff in post prior to May 2013 when the R&IS was released. A total of 21 academics responded and completed the survey (17% of the possible population).

7.3.1 Comparison of sample characteristics of the online 'impact' 2014 survey compared with the Cycle 1 Survey of 2013

Apart from some minor differences, particularly in 'length of employment', the two samples were similar, as Tables 11 to 13 illustrate.

Table 11 Comparison of academic roles Cycle 1 and impact surveys

Role	Cycle 1 2013 (%)	Impact survey 2014 (%)
HoD	5.4	9.5
Professor	8.9	4.8
Associate Professor (PL & Reader)	28.6	23.8
Senior Lecturer	42.9	42.8
Lecturer	14.3	14.3
GAA (Graduate Academic Advisor)	0	4.7

Table 11 suggests similar patterns in terms of academic roles with the majority as SL or Associate Professors (PL/Readers, pre-2014).

Table 12 Comparison of length of employment Cycle 1 and impact surveys

Employment length (yrs)	Cycle 1 2013 (%)	Impact survey 2014 (%)
<1	8.7	0
1-5	10.9	33.3
6-10	13	19
11-15	28.3	19
16+	39.1	28.6

Table 12 suggests the impact survey sample was similar to the Cycle 1 Survey with a notable higher percentage of academics at five years or below experience, but retaining the bias towards longer employment overall.

Table 13 Comparison of age group between the Cycle 1 and impact surveys

Age group	Cycle 1 2013 (%)	Impact survey 2014 (%)
21-30	2.2	4.7
31-39	15.2	4.7
40-49	28.3	28.6
50+	54.3	62

Table 13 shows that across both surveys, the most significant group were those 40 or over. Two of the 2014 impact survey were 39 or under. Just over 80% of the 2014 impact survey are white compared to 84.9% of Cycle 1 2013, remarkably similar, with single participants from other ethnic groups. In the Cycle 1 Survey 2013, 35% were males and 65% female, in the

impact survey 2014 38% were males and 57% female (with one non-disclosure), again demonstrating similarities.

7.3.2 Findings of the 2014 impact survey

This section provides information on the findings from the 2014 impact survey in accordance with the questions asked and uses some quotes as illustration.

1. *Experience in applying for funds*

In response to Question 2, over 57% of the sample had applied for the 2014 R&IS.

2. *Awareness of the R&IS*

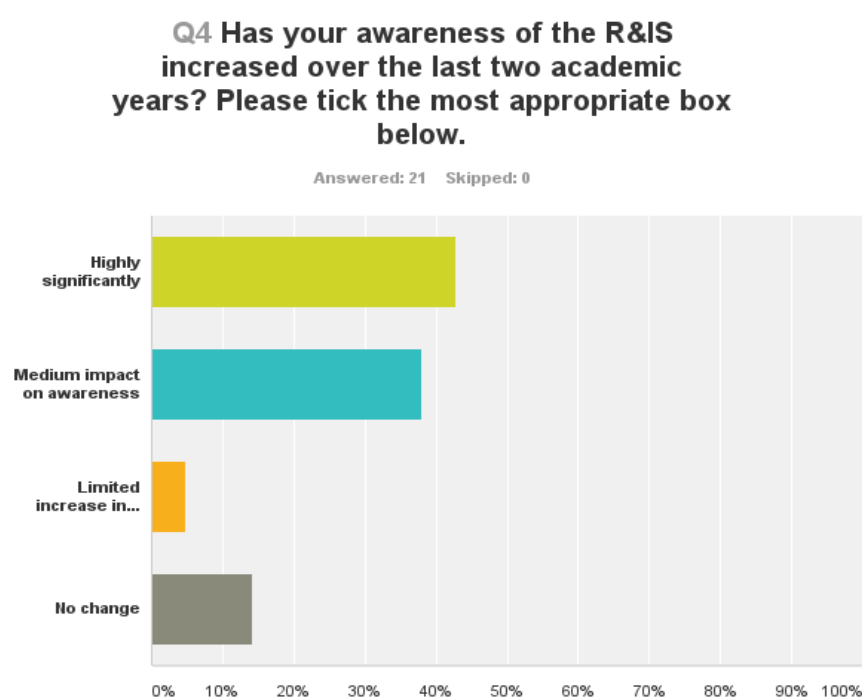


Figure 22 Changes to awareness of the R&IS

Figure 23 demonstrates that over 80% of participants stated that their awareness of the R&IS had increased 'highly significantly' (42.86%) or 'medium' (38.10) over the past two years, suggesting the impact of the ARG/interviews and consequent actions has been notable.

3. Awareness of KT

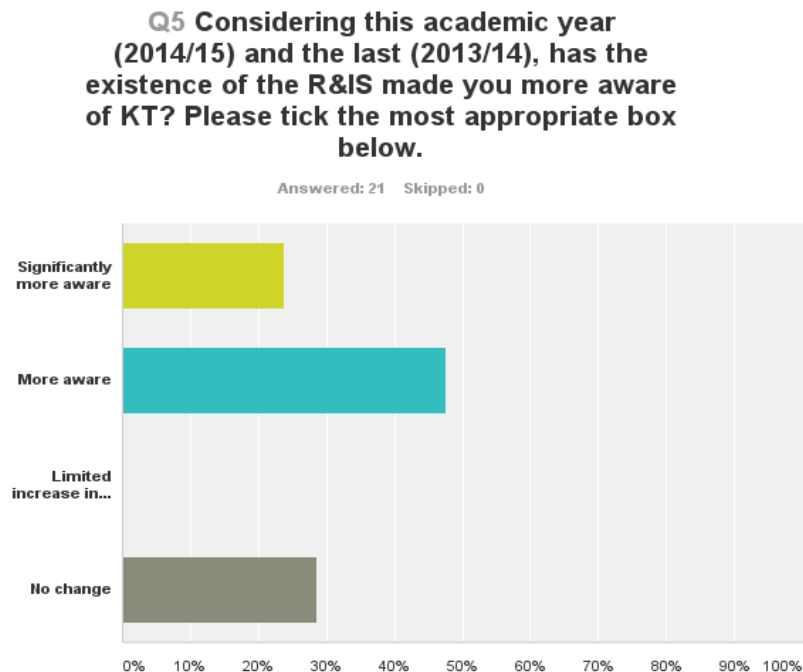


Figure 23 Changes to awareness of KT

Figure 24 shows that over 71% of participants are either 'significantly' (23.81%) or 'more' (47.62%) aware of KT due to the R&IS: a significant achievement. The 28% with 'no change' in awareness are worth further investigation, to ascertain if this reflects existing or no awareness.

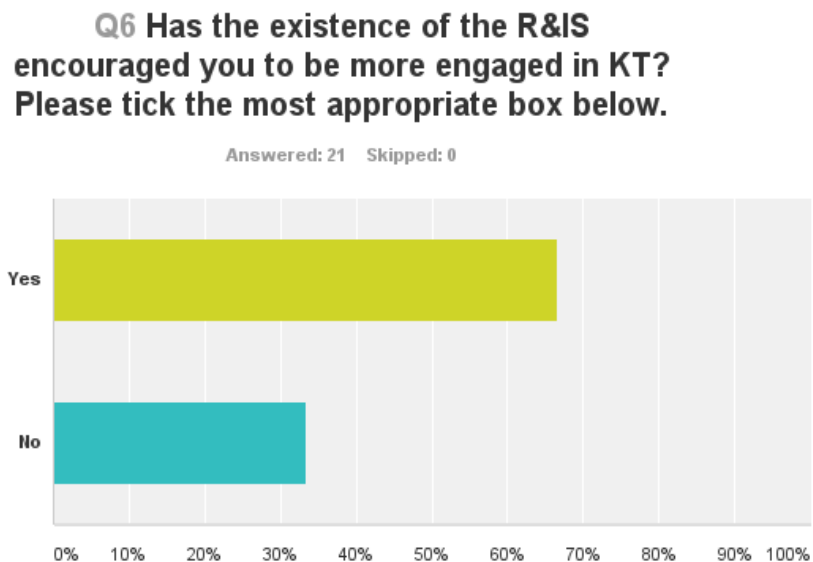


Figure 24 Has the R&IS encouraged you to be more engaged in KT

In a follow up, responses to Figure 25 showed that over 66% of participants would be more engaged with KT due to the R&IS.

4. Reasons for enhanced engagement

Q7 allowed for participants of the 14 who responded 'yes' to Q6 to provide comments on how the R&IS had engaged them more in KT. These fell into four main categories (with some selected quotes below):

- Provided resources (funds, Work Programme reduction, support staff) to allow engagement (6 responses):

"the idea funding can be accessed to support time and resources is helpful to try to seek time from heavy teaching hours that otherwise prevent the above"

"The funds also made it more possible to carry out research by allowing us to buy time from external project partners and within in the dept."

"I could use the money to appoint students to carry out some work for me, such as data entry or data analysis"

- Assisted in developing the synergies between KT and research (2 responses):

"makes links between research and KT more evident"

"The grant received could be used to buy out the researcher to enable me to engage in the research much more effectively"

- The process and information of the R&IS enabled engagement (3 responses):

"The process is more meaningful"

"Provided timescales and structures Information on criteria and priorities"

- The R&IS has enabled engagement on a personal level (3 responses):

"I have something to offer in addition to my expertise, it makes my input on shared projects more useful and enables me to make my voice more clearly heard."

5. What other interventions might increase engagement with KT?

Alternative interventions formed three main categories and could be the subject for further AR through the ARG and other management approaches:

- Awareness building, support guidance and mentorship (9 responses):

“Increased mentorship and support for new applicants”

“To keep drawing awareness to the Initiative at our Cluster Meetings/Research Meetings. Be supportive”

“I would like more support to understand KT and help me to engage with it. More practical workshops.”

“Provide a forum to explore the areas of potential KT in our special areas of interest.”

“Mentoring.”

- Work Programmes need to reflect more time to allow engagement with KT (6 responses):

“To be allocated some hours in the Work Programme to have time to focus on this.”

“Work planning has been a real issue this year and there is a need for clear and coherent work planning that allows for the development and use of speciality within the department alongside generic teaching responsibilities.”

“Recognition of the role on a Work Programme.”

- The process for engaging with KT needs to be clearer (4 responses):

“streamlined process. NOT clear on cost, process.”

“The paperwork involved in any progression is very heavy so admin support?”

“Make the application process a bit clearer.”

7.4 Concluding reflections on impact evaluation

The evaluative approaches described in this chapter may provide an indication of the part the AR research project played in developing KT outcomes within H&E. Overall, income levels by Department grew over the period of the AR. Project process and bidding for R&IS funds had

increased by value (although there were growing signs of more selective bidding for longer-term projects).

It is challenging from these figures to draw direct conclusions as to the contributions to the growth of KT by the AR project and the introduction of the R&IS, in view of other environmental variables. The online impact survey seemed to suggest there had been a significant increase in awareness of the R&IS (80% at 'highly significant' or 'medium significance' in the last two academic years) and awareness of KT (71% 'significantly' or 'more' aware). Perhaps more importantly, over 66% of survey participants would be more encouraged to engage in KT due to the R&IS. Interestingly, those commenting suggested that the availability of resources, the synergies between research and KT and the process to enabling engagement had attracted participants to KT as a result of the R&IS. In terms of engaging further in KT, participants suggested guidance, support and mentoring could be enhanced, together with recognition in Work Programmes.

As has been found in this and other studies, the high percentage of participants completing the online impact surveys who had bid for the R&IS suggests that those interested in KT may have been predisposed to respond to the survey.

8.0 Outcomes, Limitations and Further Research

This chapter summarises key outcomes from the research, identifies some limitations and makes suggestions for further research.

8.1 Outcomes

Outcomes will be considered at three levels or orders: for the individual researcher; for the organisation within which the AR was undertaken; and for the wider KT/AR community.

8.1.1 First person learning and practice: The individual

- This intense period of research activity has allowed me an opportunity to develop my knowledge and practice as a researcher, understand a wider literature base and engage with new methods of inquiry, exploring and adopting whole new paradigm shifts in my academic beliefs and understanding.
- My critical thinking and learning has been lifted to a higher level and, as a result of the process, I have been able to build on a tacit knowledge base at an existential learning level (Zuber-Skerritt, 2009) to understand why academics make decisions on engagement in KT and how this knowledge can be applied in practice.
- The use of AR has supported a far more self-reflective approach to research. Using the adapted AR conceptual model within this research project involved personal reflection at each and every stage of the AR cycle, participative reflection within the research methods of inquiry alongside colleagues and co-researchers, and a higher, meta-level reflection.
- Learning to manage the progress of a research project in a dynamic and fluid environment, where practice influences emerging theory and vice versa, was a significant personal development milestone.
- As a senior manager, I have found the AR process invaluable in developing my approaches to engaging with colleague participants as part of a co-productive process, one which I will utilise for the future.

8.1.2 Second-level learning and practice: The organisation and participants

In terms of organisational development:

- The research has continued to raise the profile of KT, allowing engagement with it from a broader group of academics within H&E. The concluding online survey of Chapter 7 provides compelling evidence that R&IS, and engagement with it, have raised the awareness of KT amongst academics within H&E.
- Despite raising its profile through this project, there appeared to remain a systematic lack of understanding of KT within significant parts of the academic community of H&E, although there also appeared to be an acceptance that KT is part of an academic's portfolio (as found by Siegel et al., 2007b). Since this School is the most productive in KT activity within MU, this may suggest a significant staff development need across the University.
- The AR process allowed various academics to influence future KT/research fund internal distribution significantly. This active engagement in decision making could be adopted and adapted in other change management circumstances and should lead to higher levels of engagement (buy-in).
- As an insider-researcher AR practitioner, it was been interesting and informative to see participants gaining knowledge and learning within the research. The ARG became a self-support group in terms of better understanding KT and its academic relevancy, allowing participants to act potentially as agents of change within their own Departments.
- Staff development has been enabled through engagement with the research process for those participants involved and also to other parts of H&E. The R&IS has been used to support personal academic research development particularly for ECRs and funding of smaller 'start-up' projects thus actively contributing to broader corporate KT and research growth objectives.
- The research provides information to support managers in achieving corporate KT objectives within my organisation. The outcomes could guide management approaches to motivating academics to engage in KT and, hopefully, achieve the challenging KPIs within the corporate plan.
- A significant 'motivator' to engagement with KT by academics, perhaps relevant to academic life in general, was to be *recognised* for one's contribution, whether through promotion and additional pay, or simply being congratulated for a job well done. Academics exhibited a complex range of responses to extrinsic and intrinsic motivators, the majority responding more to the opportunity to make a difference in society or increase networks with practice areas (sharing some similarities with the findings of

Perkmann et al., 2013). The R&IS did, however, provide a direct and highly peer-visible process of recognising KT and research success. This could be emulated elsewhere in the School and MU.

- Of particular note was the negative effect on motivation to engage with KT by commercially/business-based terminology. This is a key lesson for those wishing to stimulate KT within MU.
- An important organisational learning was the identified need for a KT champion or lead to provide mentorship, leadership, a knowledge base, advice and focus within academic teams. This specific leadership role was seen to be critical in enhancing KT activity levels. As a legacy, the ARGs have provided a clear outline of the roles and responsibilities of the KT champion, not dissimilar in concept to the 'KT Academic' (KTA) proposed by Bicknell et al. (2010), or the 'boundary-spanners' of Johnston et al. (2010) who also create external relationships and networks.
- The R&IS has vertical alignment with School practices and policies, but demonstrates the need for MU to consider a 'Total Reward' package to encompass all current incentive practices and allow organisational 'horizontal' alignment, as proposed by Armstrong and Brown (2006).
- This research would suggest there was concern about work programming within H&E in terms of both providing sufficient time to develop KT and how that was recognised within current practices.
- The enthusiastic engagement of a wide and varied group of academics in the ARG would suggest that this could continue beyond the DBA as a community of co-producers of mutual learning.

8.1.3 Third-level learning and practice: The wider AR and KT community

My research contributes to the wider body of knowledge in the application of AR by both senior managers in HE seeking 'change' towards corporate objectives and other KT professionals operating within the HE sector. As a researcher-practitioner applying AR in this context, developing theory through my research and practice-based learning, I have potentially contributed to the 'New Scholarship' (McNiff and Whitehead, 2011, p.74) in terms of:

- empowering myself as a researcher and, through the AR process, generating theories and building these into my developing practice
- my own practice and research have been joined through this process and, through my research practice, others have been engaged in contributing to theory

- as a practitioner-researcher, I have created opportunities for debate and discourse with other practitioner researchers
- my research has allowed an opportunity to influence the practice of others through developing learning in this discipline.

In particular, and recognising that my own findings cannot readily be generalised:

- My research builds on that of others to suggest that academics are motivated to engage in KT by a range of factors, both intrinsic and extrinsic, exhibiting a hybrid approach dependent on a variety of pecuniary, temporal, social and other factors. Further, whilst the key motivation appeared to be through making a difference and achieving academic profiling (the 'Ribbon' and 'Puzzle' aspects, Stephen and Levin, 1992; Lam, 2011), there are notably academics from a wide range of disciplines that seek personal financial rewards (the 'Gold' aspect, *ibid*).
- Support has emerged within this research for the proposition that the nature of KT involvement is related to academic discipline. Perhaps surprisingly for a non-research intensive university, my findings correlate well with others indicating that a desire to improve research outcomes is a motivator for engaging with KT (Abreu et al., 2009) but, that in a School strongly focused on professional training, a desire to build networks within practice was equally important. Academics within my research were particularly motivated by the prospect of engaging with KT where this might lead to social change and a positive impact within society (as for Olmos Peñuela et al., 2013), with some attracted to the potential for personal profiling (affective ego).
- The lack of quite basic understandings of KT and its role in academia was also a thread running through this research. I suspect strongly that this may be reflected across a large proportion of the sector and may indicate a significant sector-wide staff development requirement.
- A R&IS, developed and implemented through an AR approach, could be an effective part of a suite of management initiatives within an academic environment to encourage engagement with KT. Notwithstanding that this research is limited in scale and scope, it does meet recommendations of Todorovic et al. (2011) to undertake such research at a 'departmental level' and the early indications are that the R&IS has had an influence. However, no R&IS will succeed without clear and unequivocal support from the executive level of management of the academic value and importance placed on KT success (as proposed by Armstrong, 2012). In addition, the fears of Shields (2007)

that rewards might unhelpfully focus activity on certain tasks at the expense of others has not emerged in this research, as the R&IS as implemented has enabled investment in a broad range of academic activities, not just KT.

- My research would illustrate that an econometric evaluation of KT success would be misleading within health and social science faculties where outputs are more likely to be people-based (as found by Hughes and Kitson, 2012) and involve significant interaction with the public and civil sectors, where there is less of an overt commercial environment. A key lesson for engaging academics in KT was that participants in this research were strongly averse to the use of commercial language.
- My research adds to that of others in suggesting the management of time available for an academic to perform their various duties is critical to the success of KT. Throughout my research, the issue of time paucity to engage with KT has been at the core.
- AR applied in this context can be an effective approach to harnessing the theoretical and practice knowledge base of a group of professionals and, through co-production of learning in a mutually respectful and open engagement process, directly result in policy development/change management.
- Participants in my research were highly responsive to the organisational contextual issues at the time of the research and this seemed to be amplified within group work, where the stance, concerns and anxieties of colleagues were accentuated. Insider-researchers need to be highly aware of this situation and guard against their own determined opinions, prejudices and positions biasing the research process.
- As an approach, AR is adept at being flexible in addressing the challenges of organisational change, particularly over a longer period where it is perhaps inevitable. As Cook (2009) and others have suggested, AR can revel in such 'messiness'.
- The conceptual model used for this research has enabled a framework to support the intended objectives. Within this I would suggest:
 - In some cases the adherence to a complex reflection approach at each stage of the individual AR Cycles might be unnecessary
 - I would extend the Zuber-Skerritt/Perry model of academic AR for a higher award to include engagement of participants in the meta thesis /write-up stages
 - Although of some age now, and not without critics, the Mezirow forms of reflection represented a good platform for higher level reflection, but there

was potential for significant overlap. However, this concern was of limited importance to the research project in terms of its overall findings.

- I would commend the practice I adopted of undertaking the meta-reflection contemporaneously with the AR Cycles, particularly for longer, award-based projects, as it allowed for intensive, authentic reflection ‘in the moment’ that generated the basis of theory as an iterative process.

8.1.4 Summary of key lessons emerging from the research for KT practitioners and policy makers

Whilst accepting that the research was highly situational, there are some key lessons that emerged from the research that may be transferable in terms of Practice, Policy and Theory:

Practice	Policy	Theory
The research identifies how managers in HEIs might utilise a Rewards and Incentives Scheme to motivate academics to engage in KT. The use of Action Research (AR) allows good practice through staff contributing to the development of such a scheme.	This research would suggest a significant lack of understanding of the full range of KT opportunities available to academics in the health, education and social care/work sectors which it is postulated could be a sector-wide issue to be addressed.	The use of AR participatory research techniques would appear to engage academics in KT. Furthermore, such approaches enable participants to contribute to situationally contextualised theory development.
Management interventions to enhance KT activity amongst academics need to reflect a complex range of extrinsic and intrinsic motivators.	KT ‘champions’ (intrapreneurs) within organisations and at academic discipline level appear to be a critical factor in promoting KT engagement.	The use of an AR approach allows staff/colleagues to be directly engaged in the formulation of organisational policy development
The balance between and within intrinsic and extrinsic motivators changes over time and is situation (opportunity) specific. Most academics in this research were more focused on achieving public ‘good’ from their KT activity and/or personal recognition.	In the health, education and social care/work disciplines, appealing to intrinsic motivators such as ‘making a difference in society’ and ‘personal recognition’ are likely to be more effective motivators.	A R&IS could be an effective approach to engaging academics in KT but this needs to be considered in the context of the organisation’s approach to rewards and to be consistent with such performance approaches.

Organisations are advised to consider any Rewards and Incentives Scheme (R&IS) as part of a broader 'Total Reward' approach to ensure consistency, fairness and equity across all arrangements that allow performance-related recognition.	These research outcomes correlate well with others which indicate that the precise nature of KT activity is likely to be discipline specific.	The issue of 'time' availability to engage in KT remains a critical issue. The sense that KT remains somehow '3 rd stream', additional to teaching and research, remains an impediment to further significant expansion.
AR is adept in dealing with significant organisational change that occurs during any research process due to the iterative 'cycles' inherent within its structure and a highly reflexive approach, allowing for high levels of flexibility.	Econometric evaluation of KT outcomes would not provide an effective measure of success for health, education or social care/work academic activity. This has implications for the HE BCI survey, HEIF allocations, and the proposed use of REF 2020 impact metrics.	The nature of participants' responses to AR is highly sensitive to the organisational context within which AR is practiced – significant events directly influence contributions. Theories that emerge from the research are therefore highly context dependent rather than generalised. The effects of this could be minimised by repeating the research in more universities and varying contexts.
I would commend to other researcher-practitioners the practice I adopted of undertaking the meta-reflection contemporaneously with the AR Cycles, particularly for longer, award-based projects, as it allowed for intensive, authentic reflection 'in the moment' that generated the basis of theory as an iterative process.	Health, education and social care/work academics find overtly commercial language and KT technical 'jargon' demotivating and off-putting.	The approaches used within this research may assist the KT community in establishing a consistent approach to the consideration of motivation to engage in KT which could aid comparability of studies.
To augment the use of Nominal Group Techniques (NGTs) or similar approaches as part of AR, participant observation (ethnography) may assist in better understanding the nature of participant interaction as it impacts on recorded results.	Concerns of Shields (2007) that rewards may bias activity to tasks/work carrying a reward can be managed so as to ensure all aspects of an academic's portfolio can be recognised.	

Table 14 Summary of key lessons emerging from the research for KT practitioners and policy makers

8.2 Limitations

The following are the main limitations of the research outlined in this thesis:

- Restructuring of the University and the consequent changes to the School structure during the research resulted initially in the loss from the research population of colleagues in Natural Sciences and later the London Sport Institute and Psychology. To counter-balance this, colleagues from Education joined the population. Whilst it should have been preferable to retain the original population throughout, the AR process was able to cope with these changes. As strong protagonists of the R&IS, the loss of Psychology, and with it a significant part of the School's previous research activity, could have risked a destabilisation of the Scheme in 2014/15.
- The focus of the AR within H&E, together with the methods of inquiry followed, limits the generalisability and transferability of findings not only within MU to other Schools but also beyond, nationally and internationally. Despite this, the findings, taken in the context of other work, may be a valuable addition to the canon of research relating to engagement of academics with KT and the application of AR approaches.
- The membership of ARG2 was not exactly the same as the original ARG meeting. This led to a certain repetition of contextual aspects, but did not have a significant effect. However, ideally the same members should have been available, but the research had to contend with such real-life eventualities.
- The research could have spawned a series of interventions following the initial Cycle 1 Survey, but I was limited by my own capacity and resources in terms of what to address. This is a limitation of the sole researcher and indicates that a research team could have had a broader and wider impact through a multi-interventionist approach.
- Section 6.3.5 specifically addresses the issue that the research does not primarily lead to quantitative measures of impact. This position is supported within the research, but others within the University may see that as lacking validity in terms of adoption in other Schools. This may be reflective of the potential for paradigm disagreements within the same institution.
- By its nature, the research is of limited scale in terms of the sector. The purposive, in some situations convenience sampling, approaches raised issues of potential bias. In particular, volunteers (respondents) for Cycle 2 interviews may well already have had sympathies for KT (as found in other similar studies), and the majority of participants in Cycle 2 interviews were senior academics.

- As a facilitator of AR, and as a senior manager, it might not have been possible for me to enact all proposed actions due to economic, social, political etc. issues and, hence, not fully meet some researchers' emancipatory expectations.

8.3 Further research

The following are suggestions for future research:

- Other Schools within MU could consider establishing an R&IS and broadening the potential future institutional application of this research.
- In common with extant research, the issue of how academic time can be better managed to allow engagement with KT requires further investigation – is it similar for other competing academic demands, or unique to KT?
- Reviewing relevant literature, the sector would appear to continue to lack clear agreement on the precise nature and characteristics of KT. Perkmann et al. (2013, p.431) noted that research on variables such as motivation and organisational conditions for the development of KT lacks a consistency of approach:

“reaching a consensus on the central measures relating to academic engagement, such as activities, motivations, barriers and outcomes, would improve the quality and comparability of studies.”

- As already noted, the importance of culture and sub-culture amongst academic disciplines and groupings appears to have an influence on the propensity to engage in KT. Some researchers, including Perkmann et al. (ibid), have suggested that the sub-cultures within which academics operate may be more important. The absence of significant overtly commercial KT in H&E is not uncommon in the humanities and social sciences, as this has been shown to be more closely associated with STEM subjects. But, as Hughes and Kitson (ibid) found, there is significant activity in other forms of KT. Many academics in H&E are motivated by the prospect of 'making a difference' and enhancing practice relationship development. They are less likely to be motivated by overtly commercial KT. My research supports others in the field who maintain that the precise nature of KT activity and academic discipline influence motivation. This could be explored further: in particular, how reflective of the sector is Middlesex's H&E, particularly compared to university Departments similarly focused on professional recognised, practice-based education?

- Given the findings of the need for proactive support of academics to achieve corporate KT objectives, it would be advantageous to include the RKTO (MU's equivalent of a TTO) in a future ARG to encourage greater collaboration in these areas and enhance institutional learning.
- This research has resulted in the appointment of KT Leads, and future research could evaluate/reflect on the consequent impact that there might be for levels of engagement and how this 'intrapreneur' role could be developed. This would lend itself to the continuation of the current AR arrangements and would remain as a possible legacy of this research.
- The continuum between intrinsic and extrinsic motivators for engaging in KT requires further investigation, as my research would suggest a stress-line exists within the organisation as to whether individual financial rewards are viewed as appropriate by academics.
- As noted, my resources were limited and the research could be repeated on a much larger scale to judge variances due to the nature of the university (level of research intensity as a differentiator, for example). In such research it would be interesting to include a comparative study of the use and non-use of NVivo for analysis.
- As a senior manager and researcher, my use of AR has necessitated the delegation of actions through other middle managers. In terms of the principles of AR as part of a higher award, it would be interesting to explore further whether this has implications for claims that the individual researcher may have in terms of outcomes of the research. In effect, and as acknowledged by Klocker (2012), any outcomes may well be better claimed by the AR 'team'.
- With additional resources, the use of filming techniques to support both individual and ARG group work interviews could be useful to provide visual interpretation of transcripts of the activities and behaviours of participants.

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